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Datek IT Integration Challenges Ameritrade

Merged online brokerage begins massive task of melding low-end, high-end architectures

BY LUCAS MEARIAN

Two months after Ameritrade Holding Corp. completed its $1.3 billion acquisition of Datek Online Holdings Corp., IT managers at the merged online brokerage are rolling up their sleeves to begin integrating two distinctly different technology architectures.

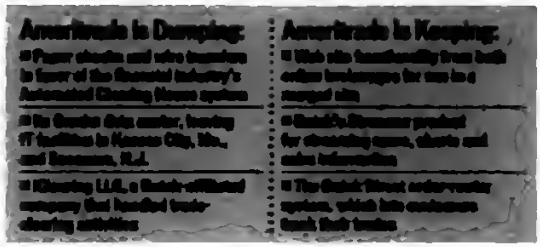
Before the effort is finished, Ameritrade IT executives said last week, three data centers must be consolidated into two, a pair of online trading Web sites needs to become one, and a single IT infrastructure has to be set up.

That won't happen overnight. For example, Cecilia Murphy, vice president of technology engineering services at Omaha-based Ameritrade, said the company's plan is to have a unified systems architecture in place by next summer. Ameritrade hasn't decided yet what server technologies will be used, she said.

Datek's IT backbone comprises mostly low-end Windows NT servers running proprietary middleware that passes message traffic back and forth between its Web site and trading system. The company had also installed Linux-based IBM servers built around Intel microprocessors.

On the other hand, Ameritrade uses San Jose-based BEA Systems Inc.'s Tuxedo transaction middleware and has a technology infrastruc-

Ameritrade, page 16



IT Still Iffy on Web Services

Users experimenting, see potential for help with app integration

BY CAROL SLIWA

Web services clearly will play a role in the application integration plans of many IT shops. But how big a role, and when that will happen, is anybody's guess.

Several IT managers attending Gartner Inc.'s recent Application Integration and Web Services conference in Chicago said they have yet to determine in what ways, if any, they will use Web services to address their integration needs.

"I think it will play a large part over time. We're looking at using it in isolated cases to get some experience," said Bill Genn, a site architect at London Life Insurance Co. in London, Ontario.

Genn said one such effort might involve aggregating in-

Web Services, page 57

Citrix to Simplify Licensing

Vendor vows to make both purchase- and usage-tracking easier

BY CAROL SLIWA
ORLANDO

Citrix Systems Inc. knows its licensing policy is too complicated, and last week it pledged to do something about it.

CEO Mark Templeton told customers at the Citrix iForum conference here that changes are in the works to make it easier to do business with the Fort Lauderdale, Fla.-based software maker.

In an interview with *Computerworld*, Templeton explained that his company is working on a technology-based approach to help customers count and manage license connections through a service that either Citrix or the customer can run.

Citrix's core product, MetaFrame XP, delivers applications to end users from a central server. Customers buy license connections through resellers based on the number of concurrent users accessing the server.

Licensing services will be built into Citrix's software, allowing customers and the vendor "to count usage in about five different ways," Templeton said. That will give both parties "the flexibility to have licensing programs built around different ways of counting," he added.

He said he expects to present the new options to customers in about a year.

For many of them, that promises welcome relief. Raymond Leitz, director of technical services at AutoNation Inc. in Fort Lauderdale, said Citrix's current licensing policies "do not make sense" for his company. For starters, he

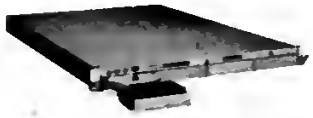
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Meet the Security Adviser

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What's Your Fault Feedback Ratio?

KNOWLEDGE CENTER: Columnist Johanna Rothman says you should start tracking how many of your bug fixes are successful and how many are bad. **QuickLink 34185**

Storage Editor's Choice WebLog

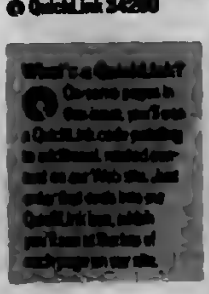
KNOWLEDGE CENTER: A collection of what you need to know from around the Web, compiled by editor at large Marian Prokop and online managing editor Sharon Machlis. **QuickLink a2880**

Operating Systems Forum

FORUMS: The Computerworld forums had more than 45,000 visits last week. Come see what the attraction was. **QuickLink a2880**

Get Ready for the Rebound

ONLINE NEWS: Companies can begin positioning themselves now for an economic rebound by focusing on technologies and strategies that will boost the top line, namely Web services, "right-channeling," shareable systems and adaptive supply networks, say Forrester Research analysts. **QuickLink 34200**



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AT DEADLINE

Gates Details Visual C++ Upgrade Plans

Bill Gates, Microsoft Corp.'s chairman and chief software architect, said the company is developing a Visual C++ .Net upgrade that will be "99% conformant" to the International Organization for Standardization's C++ standard. Speaking at an object-oriented programming conference in Seattle, Gates also demonstrated a tool, code-named Scout, that Microsoft is using internally to uncover software vulnerabilities.

DHL Opens Data Center in Arizona

DHL Worldwide Express Inc. said it planned to begin using a data center in Scottsdale, Ariz., over the weekend, completing a trio of IT facilities in the U.S., Europe and Asia. San Francisco-based DHL plans to invest $250 million over the next five years to build and operate the new data center [QuickLink 27679].

Symantec Fixes Software Flaw

Symantec Corp. issued a patch designed to fix a memory-allocation flaw in its Norton Internet Security 2003 software suite. The flaw could cause e-mail messages to be deleted before they reach end-user in-boxes. The problem involves the antispam portion of the software, according to Cupertino, Calif.-based Symantec [QuickLink 34291].

Sun Still Mulling Software Pricing

Jonathan Schwartz, executive vice president of Sun Microsystems Inc.'s software unit, said the company still hasn't decided how to charge users who want to buy more functional versions of the middleware products it plans to bundle with Solaris. Sun will include limited-functionality versions of its Open Net Environment products in the next release of the operating system, he said.

P&G Kills Single-Vendor Negotiations With EDS

Consumer goods company will instead seek multiple smaller outsourcing deals

BY TODD R. WEISS

PROCTER & GAMBLE Co.'s quest for a multibillion-dollar IT and business operations outsourcing deal took yet another twist last week, as the consumer products maker disclosed that it's giving up on trying to reach an agreement with a single vendor.

P&G had been negotiating a contract with Electronic Data Systems Corp. that was expected to be worth as much as $10 billion over 10 years. But P&G spokeswoman Linda Ulrey said the Cincinnati-based company now plans to pursue a series of smaller deals with multiple outsourcing vendors.

"We're going to continue to look at outsourcing opportunities," Ulrey said. "What we've done is modify our approach."

When asked if the weak third-quarter financial results EDS reported last month influenced P&G's decision, Ulrey acknowledged that a warning issued by EDS "caused us to pause and look at the whole market. The dynamics there are changing very rapidly."

Pieces of the Pie

P&G had already slowed down the pace of its talks with EDS after the two companies initially indicated they were just days away from finalizing a deal [QuickLink 33410]. Despite last week's development, EDS will still be invited to pursue pieces of the outsourcing pie at P&G, Ulrey said.

Ken Smalling, a spokesman for Plano, Texas-based EDS, said company officials understand and accept P&G's new direction. "We're pleased that we're considered by them to be a leading candidate to support their needs," he added.

Andrew Efstathiou, an analyst at The Yankee Group in Boston, said this kind of turnabout isn't uncommon. Companies that want to outsource some of their business operations along with IT "have been very aggressive" in negotiations with vendors, he said.

> **"We're going to continue to look at outsourcing opportunities. What we've done is modify our approach."**
>
> LINDA ULREY, SPOKESWOMAN, PROCTOR & GAMBLE

In this case, P&G has been looking to sell its back-office business operations to an outsourcing vendor, which would likely have required a large upfront outlay of money on the part of EDS or another vendor.

P&G has "had difficult negotiations with everybody" because of the required cash infusion, Efstathiou said. "Now they want to break it up into smaller pieces so it's more easily digestible."

EDS has had two rounds of negotiations with P&G in recent months. It was one of the original finalists for the outsourcing deal, along with Dallas-based Affiliated Computer Services Inc. (ACS). But EDS withdrew its proposal in July, citing concerns over the acquisition price P&G was seeking for its operations.

That left ACS as the only apparent contender. However, EDS returned to the table in September, and ACS took itself out of the running. Lesley Pool, chief marketing officer at ACS, last week declined to comment on P&G's decision to seek multiple deals.

Dell Targets HP With Pocket PC Handheld

BY BOB BREWIN

Dell Computer Corp. plans to introduce a low-priced Pocket PC handheld computer at next week's Comdex/Fall 2002 trade show in Las Vegas as part of a bid to extend its reach into the corporate IT market.

Analysts said Dell's entry into the handheld market is also designed to put added pressure on Hewlett-Packard Co. HP has been selling devices based on Microsoft Corp.'s Pocket PC operating system since early 2000 and currently offers iPaq devices developed by Compaq Computer Corp., which HP acquired in May.

Dell offered a teaser introduction to its Axim X5 handheld on its Web site last week. The vendor declined to disclose pricing, except to say that the device would be sold at "unheard-of low prices."

Sam Bhavnani, an analyst at ARS Inc. in La Jolla, Calif., predicted that Dell will sell a low-end version of the Axim X5 with Intel Corp.'s 300-MHz StrongArm processor and 32MB of memory for $199. A higher-end model with a 400-MHz processor and 64MB of memory is expected to be priced at $299, he added.

Bhavnani said Dell has contracted with Wistron Corp., a subsidiary of Acer Inc. in Taipei, Taiwan, to manufacture the Axim X5. Wistron already makes the Cassiopeia line of Pocket PCs for Tokyo-based Casio Computer Co. Dell didn't return calls seeking comment.

The prices Dell is expected to charge are well below the $500 to $700 price range of HP's iPaq line. HP plans to introduce new iPaq models at Comdex, but a spokesman declined to comment on the pricing plan for the devices.

Alex Slawsby, an analyst at IDC in Framingham, Mass., said Dell took notice of the success HP has had with iPaq among corporate users and decided that it needed a handheld of its own to round out its hardware line.

But the low price of the Axim X5 won't matter for many corporate IT buyers, Slawsby said. He predicted that Dell will "throw in the handhelds as a deal closer" on sales involving its servers and PCs.

Bhavnani said Dell is attempting to commoditize yet another slice of the computer market. But, he added, "there is a lot of room for innovation in this market," pointing to the new Tungsten devices that Milpitas, Calif.-based Palm Inc. announced last month [QuickLink 33932].

Palm, which uses its own operating system, also sells the $99 entry-level Zire device. For that reason, Bhavnani said he doesn't expect Dell's entrance to put as much pressure on Palm as it does on other Pocket PC vendors.

PRICING

Handheld PCs

Palm Zire: $99

Dell Axim: $199-$299*

HP iPaq: $500-$700

Palm Tungsten T: $499

*Based on analysts' predictions

Users Weigh Impact Of Microsoft Case

Many IT managers uncertain decision will bring changes

BY PATRICK THIBODEAU
WASHINGTON

Throughout the Microsoft Corp. antitrust case, users have been divided about the wisdom of the government's actions. Now, as the case possibly nears its end, many are mulling its impact. .

"I don't see this having a significant impact on Microsoft or making the world more competitive," said Donald Stroud, information systems director at Plain Dealer Publishing Co. in Cleveland. "The world is going to be more competitive when somebody has better ideas that Microsoft can't take and run with."

But Andre Mendes, chief technology integration officer at the Public Broadcasting Service in Alexandria, Va., said he believes competition is thriving, with or without the lawsuit. "I think there is plenty of evidence in the marketplace that innovation has not been stifled," said Mendes, who pointed to success stories — Linux, in particular. "By and large, worthwhile and worthy software packages are making inroads."

After three months of hearings that ended in June, U.S. District Court Judge Colleen Kollar-Kotelly on Nov. 1 rejected a sweeping set of remedies sought by nine states that had refused to sign a Bush administration settlement.

The case isn't officially closed, and if the nonsettling states decide to appeal, it could last another year at least. The state attorneys general were occupied with reelection last week, and no decision has been made on an appeal, said Bob Brammer, a spokesman for Attorney General Tom Miller of Iowa, one of the nonsettling states.

Legal experts say an appeal would be difficult. Appeals courts tend to give a lot of deference to trial judges, said Robert Lande, a University of Baltimore law professor, who said the decision is "close to appeal-proof."

But that's not to say that the nonsettling states don't have grounds. The states could argue that in limiting her remedies, Kollar-Kotelly misread last year's Court of Appeals decision that upheld a lower court's finding that Microsoft had illegally maintained its operating system monopoly.

"She has let them off the hook from some of the more substantial liability findings, and I think that is something that will raise eyebrows," said Donald Falk, an antitrust attorney at Mayer, Brown, Rowe & Maw in Palo Alto, Calif.

Some observers said the lawsuit may have changed Microsoft for the better. "There appears to be an effort to clean up their practices, as well as their image," said Chris Apgar, head of security at Providence Health Plan in Beaverton, Ore. "Whether that really is true or is a new coat of whitewash remains to be seen."

If users are uncertain about the antitrust case's impact, Microsoft's competitors — despite the ongoing private antitrust cases — seem resigned.

"Ultimately, it's now case closed, and it's back to creating great products and letting the customers decide," said Matthew Szulik, CEO and president of Linux vendor Red Hat Inc. in Raleigh, N.C.

Makers of products that Microsoft wants to compete with are wary. Microsoft has made an aggressive push into the development of mobile phone software and operating systems over the past three years, but so far major players don't feel threatened.

William Plummer, vice president of strategic planning and external relations at Nokia Inc. in Irving, Texas, said he expects antitrust authorities will "remain vigilant" to ensure that any one company doesn't try to "manipulate" the mobile phone market.

Jon C. Dell'Antonia, information systems director at clothing maker OshKosh B'Gosh Inc. in Osh Kosh, Wis., said only time will tell what changes the lawsuit will bring. But, he said, "what did [Microsoft] really lose? What did they get taken away from them that's really significant? The answer I come up with is, 'Nothing'."

What's Next?

APPEAL? The nine nonsettling states could appeal, but legal experts say the chances for a successful appeal are slim.

EUROPE: This is Microsoft's most significant threat; antitrust authorities are due to act next month.

PRIVATE CASES: Preliminary injunction would force Windows Java Virtual Machine distribution. Otherwise, cases may take years.

Bob Brewin and Todd R. Weiss contributed to this report.

NOT OVER YET
Microsoft still faces legal actions brought by competitors and the European Commission.
QuickLink 34231
www.computerworld.com

Microsoft Launches Tablet PC Software

Hardware vendors ready pen-based devices; early adopters satisfied

BY LINDA ROSENCRANCE

After months of prelaunch publicity, Microsoft Corp. last week unveiled its Windows XP Tablet PC Edition operating system, which lets notebook users work with a digital pen instead of a keyboard.

Nearly two dozen hardware vendors, including Acer Inc., Hewlett-Packard Co., NEC Corp. and Toshiba America Information Systems Inc., are set to release Tablet PC devices starting as early as this week.

Microsoft officials claimed that the advent of the Tablet PC represents an evolution of the corporate notebook PC, and some early users said they think the technology can live up to the hype vendors are generating.

David Methot, contracts manager at Bechtel National Inc., said the Richland, Wash.-based engineering firm has been using Taipei, Taiwan-based Acer's TravelMate 100 to reduce the amount of time it takes to finalize contracts with customers.

Methot said that even though Bechtel has a Web-based contract management system, contract closeout administrators often ran into delays because they had to track him down to get his signature on hard-copy documents. But with the Tablet PC, the administrators can save hours or even days by e-mailing Methot the documents, which he signs electronically and then sends back to them.

Workers are also using the devices to take handwritten notes during meetings, saving the time it would take them to transcribe notes written on paper into their PCs, he said.

Tablet PC users can write directly on a specialized LCD screen with a digital pen or, in some cases, input information using a traditional keyboard and mouse. Microsoft also included a program called Microsoft Windows Journal, which allows handwritten notes to be stored as graphics called digital ink. In addition, the software can convert handwritten notes into ASCII text.

The Tablet PC devices, which are expected to cost about $2,000, are designed for users who aren't typically tethered to their desks, such as insurance adjusters and field sales and service workers.

The underlying use of Windows XP paves the way for the new technology to fit into corporate IT infrastructures and makes it possible for developers to use existing tools to build Tablet PC applications, said Kelly Berschauer, a product manager at Microsoft.

Henry King, CIO at Skidmore, Owings & Merrill LLP, said building designers at the New York-based architectural firm use design-creation and communication software developed by Autodesk Inc. on HP's Compaq TC 1000 tablet device.

King said the combination of the Tablet PC and San Rafael, Calif.-based Autodesk's application lets users sketch out design concepts, mark up drawings and instantly send changes to the entire design team from remote locations.

Selling users on the Tablet PC technology won't be a short-term slam-dunk for Microsoft and its hardware partners, said Michael Gartenberg, an analyst at Jupiter Media Metrix Inc. in New York and a *Computerworld* columnist. But, he added, "five years from now, it's likely that tablet functionality will become part of mainstream computing, and we won't view it as anything special or different."

Tablet PC

- The software includes the full capabilities of Windows XP Professional Edition.
- Users can write directly on an LCD screen using a digital pen.
- Handwritten notes can be saved in longhand or converted into ASCII text.
- Supported languages include English, German, Japanese, Korean and Chinese (both traditional and simplified).

BRIEFS

IBM Taps Leader of 'On-Demand' Push

IBM announced in an internal memo that it's naming Linda Sanford, who has been heading the company's storage systems group, to take charge of the "on-demand" computing initiative outlined two weeks ago by CEO Samuel J. Palmisano [QuickLink 34091]. IBM said the storage unit will be merged with its server group effective Jan. 1.

WorldCom, SEC in Settlement Talks

WorldCom Inc. said that it's discussing a settlement of an investigation into its accounting irregularities with the U.S. Securities and Exchange Commission. The company added that "based on very preliminary reviews," it now expects to lower previous profits by more than $9 billion. That's up from an earlier estimate of a decrease of $7.2 billion, which in turn was roughly double what WorldCom initially predicted.

Cisco Up in Q1, But Lowers Its Forecast

Cisco Systems Inc. reported its sixth straight quarter of improved financial performance, saying that revenue rose 9% year-over-year to $4.8 in its first quarter. Net profits totaled $618 million during the quarter, which ended Oct. 26. But Cisco predicted that revenue in the current three-month period could be about the same as in the first quarter or down by as much as 4%.

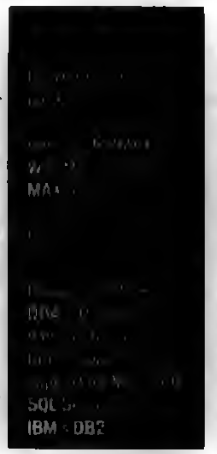
Short Takes

Ottawa-based COREL CORP. laid off about 220 employees, reducing its workforce by 22%. . . . IBM announced a deal to buy Tarian Software Inc., an Ottawa-based developer of electronic records management software. . . . NOVELL INC. released an upgrade of its eDirectory software that adds support for IBM's AIX operating system.

MARK HALL • ON THE MARK

IPsec, SSL Vendors May Fumble Security . . .

. . . opportunities in the emerging Web services world, where applications will be protected higher in the software stack, according to Bob Blakely, chief scientist for privacy and security at IBM's Tivoli Software unit. Both IPsec and SSL, he says, don't use "intuition" like people do in protecting systems. He likens the protocols to "the **British Army notion of security**, where they will defend themselves until they're killed. Protection is not defeating an enemy, but holding it off until people can fix the problem," he adds. Until Web services arrive in force, however, **IPsec and SSL vendors will continue to whack each other** with claims about the deficiencies of the other's approach. Evan Kaplan, CEO of Seattle-based Aventail Corp., touts SSL for its ubiquity in browsers and alams IPsec for its complexity. Countering is Sweta Duseja, product marketing manager at Check Point Software Technologies Ltd. in Redwood City, Calif., who disses SSL because its simplicity is valid with only HTTP-based applications; anything else, and you've got increased licensing and installation hassles. IPsec, she argues, gives IT better management control over resources. Both companies are doing more than just tossing brickbats at each other. Aventail is readying a Java client that will work with its EX-1500 security appliance, adding security to PDAs, Macintoshes, kiosks and anything else that can run a Java virtual machine. It's now in beta with no scheduled release date, says Kaplan. Not to be outdone, Duseja points to Check Point's Linux client, which will ship before year's end. And, she says, the company is already building client code for Apple Computer Inc.'s OS X for delivery next year. • Web services may be offering a oew methodology for security, but the code you use to build these services may be the most vulnerable part of the application, especially if you're using Visual Studio .Net. **Web services created with Microsoft Corp.'s development platform can easily be decompiled**, revealing their source code and thus jeopardizing intellectual property as well as the program's security and licensing restrictions. That's why at Comdex next week Microsoft will be bragging about a deal it made with PreEmptive Solutions Inc. The Cleveland-based company's Dotfuscator, now available as a separate tool, will become part of the next release of Visual Studio .Net, code-named Everett, in the first half of next year. Microsoft developers are unaccustomed to protecting their code, says PreEmptive CEO Gabriel Torok, because Windows apps are compiled as x86 binaries — far more difficult to reverse-engineer. This is no small matter, because there are plenty of tools to decompile software, and **it's not illegal. But it's not nice.** • Is your Oracle database slower than a vendor's customer support? Well, next April you can boost its speed with InfoCyclone Inc.'s database accelerator appliance. The Tel Aviv-based company believes that its device can deliver near-real-time responses even to the most complex business intelligence queries by replicating the most used data in its **4GB or 16GB memory.** • Online CRM vendors are warily waiting for Microsoft to release its CRM product, which Alex Simon, product unit manager, says will ship in "30 to 40 days." Keith Raffel, chairman of UpShot Corp. in Mountain View, Calif., purports that because you'll be able to license Microsoft CRM for on-site use, as well as via the application service provider model like his company's competing software, the Redmond giant's approach "will not be a true Web service." **Simon says that's not so.** "All of it is .Net-aware," he claims. The UpShot software, which is built oo .Net technology, goes live next week. The vendor hopes that the software's "gangbuster growth" will get a boost from its tight integration with Microsoft Outlook. Raffel is also betting that Microsoft's entry will boost overall interest by midsize companies in online CRM. No doubt. According to Simon, Microsoft will be spending tens of millions of dollars to promote the new software. **As if we don't hear from them enough.**



Verizon Seeks to Move Beyond Local Networks

Plans to offer IP-based services

BY MATT HAMBLEN

Verizon Communications last week said that it plans to court large corporate users with IP-based voice, data and network management services, as a result of its expanding long-distance footprint.

The New York-based telecommunications carrier last month won approval from the U.S. Federal Communications Commission to offer long-distance services in Virginia, and a spokesman for Verizon said it expects to receive similar approvals for Maryland, West Virginia and Washingtoo by next April.

The FCC approvals should help the company become a national network operator, Verizon CEO Ivan Seidenberg said during a conference call.

Verizon's business is largely based in the Northeast oow. But the company said it plans to set up an IP-based network backbone along the Interstate 95 corridor between Virginia and Massachusetts within a year and then add connections to its business operations in Dallas, Los Angeles, Seattle and Tampa, Fla.

The full rollout is due to be completed during the next 18 months. Verizon said it will offer voice and data oetworking as well as services such as network management and data storage, business recovery, security and remote access.

Jeff Kagan, an independent analyst in Atlanta, said that Verizon is positioning itself to be like AT&T Corp. and other national carriers by emphasizing managed network services, not just long-distance voice.

Bill Moore, telecommunications manager at the Museum of Modern Art in New York, said he hopes the expanded strategy means he will get better treatment from Verizon. "I have three different Verizoo reps in three states, so maybe this means I'll now only have one to deal with," he said.

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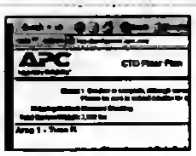
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Senate May Take New Tack on Tech Issues

Fate of opt-in effort in doubt; stronger support for banking privacy possible

BY PATRICK THIBODEAU
WASHINGTON

REPUBLICAN control of both houses of Congress, and the leadership changes it will bring about, could deter efforts to bring opt-in privacy protections to online commerce. However, Capitol Hill's approach to other privacy issues may not change.

The bid to allow the sharing of personal information only if consumers actively agree to it, known as opt-in, has been strongly opposed by the technology industry but championed by Sen. Ernest "Fritz" Hollings (D-S.C.), the current chairman of the Senate commerce committee. That has the technology industry welcoming the return of Sen. John McCain (R-Ariz.) as chairman of the key committee.

"McCain is certainly more tech-industry-sensitive then Hollings," said John Palafoutas, vice president of the AEA, an electronics trade group in Washington. But Hollings "is still a force to be contended with, and for anything to happen in that committee, Sen. McCain is going to need Hollings' cooperation," Palafoutas said.

The differences between McCain and Hollings on privacy are clear; McCain has previously backed the more passive opt-out approach to privacy legislation.

Smoother Transition

While the Senate commerce committee will likely shift in its approach, the same can't be said for the Senate banking committee, which is expected to take up renewal of the state preemption provisions of the privacy protections in the Fair Credit Reporting Act (FCRA).

The FCRA allows sharing of certain kinds of data among business affiliates; states are prohibited from setting their own data-sharing rules. The provision, which expires at the end of next year, has the potential to become the leading financial privacy issue of 2003.

In this case, a change in leadership may not make a difference. Sen. Paul Sarbanes (D-Md.), the chairman of the banking committee, may be replaced by Sen. Richard Shelby (R-Ala.), also a strong advocate of privacy protections.

"Shelby is one of the most ardent pro-privacy senators of either party," said Evan Hendricks, editor and publisher of "Privacy Times." "Privacy is in much better shape [in the banking committee] than anywhere else."

But the Senate commerce committee has been the key committee for technology legislation. It was there that Hollings began his effort to force technology suppliers to build mechanisms into their products to stop piracy.

That measure has already faced problems. "If it wasn't already going nowhere, I think with the Republican control of the Senate, it would be [more likely to go nowhere]," said Rhett Dawson, president of the Information Technology Industry Council in Washington.

The Republicans "are even less enthusiastic about having Congress get in the middle of technology choices" than the Democrats, said Dawson.

IT industry officials, however, said no bills will get passed without Democratic support, particularly because of the Senate's 60-vote rule.

Ari Schwartz, associate director of the Washington-based Center for Democracy and Technology, said McCain worked to get bipartisan privacy legislation adopted, and he believes that debate will resume. "A significant number of members ... are for stronger privacy rules," he said.

Technology associations and business trade groups have supported opt-out laws because consumers often don't take advantage of them [QuickLink 29879]. For example, the 1999 Gramm-Leach-Bliley financial modernization act includes a number of opt-out privacy protections.

Gramm-Leach-Bliley gives customers the right to stop financial services firms from selling or sharing their personal data with third parties. All that customers have to do is opt out. But critics charge that the privacy notices are full of legal jargon and fine print and are difficult to understand. Less than 5% of customers opt out of data sharing. ▶

Republican Rule

These Senate leadership changes could affect privacy legislation

- **Commerce committee chairman Sen. Ernest "Fritz" Hollings (D-S.C.)** favors the opt-in approach to sharing consumers' personal information with third parties. **Sen. John McCain (R-Ariz.)**, the returning chairman, prefers opt-out.
- **With Sen. Phil Gramm (R-Texas)** retiring, the path is clear for the banking committee's two most ardent privacy advocates to make changes. **Sen. Richard Shelby (R-Ala.)**, who may become the next chairman, wants strong privacy protections, as does **Sen. Paul Sarbanes (D-Md.)**, the current chairman

Clientless VPNs Gain Steam

Offer access to corporate nets from any computer

BY MATT HAMBLEN

Financial conglomerate Loews Corp. next week will begin the second phase of a clientless virtual private network (VPN) rollout to give remote users access to its internal network.

The adoption of emerging clientless VPN technology by New York-based Loews means that users won't need to load a VPN client on a remote PC, giving them secure access to e-mail and corporate documents from any computer.

Analysts described clientless VPNs, often dubbed Secure Sockets Layer (SSL) VPNs, as a relatively new offering being delivered in the past three months by many networking providers.

"What intrigued us was that it meets our goal to get e-mail access from an Internet cafe in Istanbul or anywhere," said Al Alexander, manager of the Loews information center.

Avoiding the need to install VPN clients was essential for the company because it has several subsidiaries and 18 Lotus Notes servers nationwide, Alexander said.

"It's a good way for consolidating control without a lot of overhead," he added. "It's the most secure thing we've been able to come up with at this point that allows access from any computer."

More Access Soon

Loews began using the clientless VPN from Whale Communications Ltd. in Fort Lee, N.J., this past summer, enabling 200 users to access e-mail. Starting next week, Loews will allow users to access its corporate intranet for information such as human resources policies and notices.

Conventional VPNs, which create a virtual tunnel in a network with encryption technology, require software clients on remote machines and are often coupled with corporate firewalls, analysts noted.

The global VPN/firewall market is approaching $3 billion this year and will hit $5 billion in 2005, said Jeff Wilson, director of Infonetics Research Inc. in San Jose. For the new clientless VPN category, which usually involves installing a gateway device, the market will hit $56 million this year and is expected to reach $986 million in 2005, he said.



Wilson said a "ton of players" are already making the gateways, including major vendors such as Nortel Networks Ltd. in Brampton, Ontario, and Check Point Software Technologies Ltd. in Redwood City, Calif. He listed eight smaller vendors as well.

Most of the products function as proxy devices that sit in front of a corporate firewall. "The downside of these is that you can't access all legacy applications," Wilson said. But clientless VPNs are a good complement to IPsec VPNs, and many large companies will use both, he said.

Whale's e-Gap Remote Access Appliance provides centralized encryption at the firewall, applying one SSL certificate for each outgoing data stream. Incoming data is scanned with two-factor authentication. Pricing starts at $23,000. ▶



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Oracle Prepares to Boost Tools For Database Management

Enterprise Manager upgrade aims to broaden its administrative capabilities

BY MARC L. SONGINI

ORACLE CORP. is moving to centralize systems management, monitoring and performance-analysis operations for users of its databases and middleware.

At its OracleWorld conference in San Francisco this week, Oracle plans to announce the latest version of its Enterprise Manager software. Company officials said Version 4.0 will let IT staffers proactively monitor their entire Oracle database installations, from the underlying hardware to end-user devices.

"Right now, when people look at performance, they look at the systems but don't see it from an end-user perspective," said Rene Bonvanie, vice president of marketing for Oracle9i products. But, he added, the Enterprise Manager upgrade will let administrators monitor complete technology stacks without having to cobble together multiple management applications.

Version 4.0 will also add the ability to view various performance benchmarks, such as query response times, through a single user interface, Bonvanie said. In addition, it can track what software patches a user has installed and how well they're performing.

Arthur Meacham, computer-assisted dispatch system administrator for the Caddo Parish 9-1-1 District in Shreveport, La., says the new capabilities in Version 4.0 sound appealing. The public-safety agency uses an Oracle8i 8.1.7 database running on a Windows NT server to support the routing of police and fire calls and the dispatching of emergency vehicles. It also uses the Oracle9i application server and portal software to make information available to the public on its Web site.

"I'm the sole DBA at my site, and it's my responsibility to keep up with performance," Meacham said. A centralized interface would make that process much simpler, he added. Meacham currently uses Enterprise Manager 2.2 to handle database analysis and other functions.

"Certainly, anything to integrate the tools even more would be welcome," said Dan Vlamis, president of Vlamis Software Solutions Inc., a Liberty, Mo.-based Oracle consultancy. Vlamis is also president of the business intelligence special-interest group within the Chicago-based International Oracle Users Group.

He noted that how well Oracle's message sells may depend on the audience. Many database administrators will be interested in simplifying management routines, Vlamis predicted. But higher-level IT executives often don't take ease of management into consideration, he added.

IBM is building self-tuning and self-management capabilities into an upgrade of its DB2 database that's due out late this month, and Microsoft Corp. claims to have embedded similar features in its SQL Server software.

But Wayne Kernochan, an analyst at Aberdeen Group Inc. in Boston, said IBM and Microsoft separate database administration from systems management. Oracle's combined approach could help companies that have database administrators managing multiple installations of its databases, but it may not be as appealing to users with multivendor software, he added. ▶

More to Come

At the OracleWorld conference, Oracle will also:

ANNOUNCE a free grid computing developer's kit that includes a set of open-source tools created by the Globus Project.

SHOWCASE the performance of its software on Linux servers, including the ability to cluster Linux-based databases.

DETAIL plans to add interactive features to its collaboration software, which was released last month and includes unified messaging and calendaring tools.

BRIEFS

CSC Close to New Outsourcing Deal

Computer Sciences Corp. (CSC) said it's in final negotiations for an IT outsourcing contract with the rail equipment manufacturing unit of Montreal-based Bombardier Inc. The deal is expected to take effect in February and could be worth more than $670 million over seven years, El Segundo, Calif.-based CSC said.

Brocade Strikes Back at Cisco

Brocade Communications Systems Inc. agreed to buy Rhapsody Networks Inc., a Fremont, Calif.-based maker of multiprotocol storage switches, for about $175 million in stock. The deal is seen as a counterstrike by San Jose-based Brocade in reaction to Cisco Systems Inc.'s planned acquisition of Andiamo Systems Inc.

SAP to Push New Strategy For Cross-Applications

Software links multiple systems

BY MARC L. SONGINI

At its developer's conference this week, SAP AG will try to sell users on the value of a new cross-applications initiative designed to support the creation of repeatable business processes that can run over disparate applications.

SAP plans to use the TechEd '02 conference in New Orleans to run a series of workshops on the cross-applications technology. The software vendor will also announce that it has signed on some key systems integrators to support the xApps initiative, including Accenture Ltd. and Deloitte Consulting.

The xApps strategy was announced in June, and SAP is due to release an initial product next month (see box). The cross-applications "are a way of helping customers to deploy new software solutions without replacing existing systems," said Peter Graf, vice president of market strategy at SAP.

For example, Graf said that Calgary, Alberta-based electricity generator TransAlta Corp. has deployed an early version of a third-party xApp application that's aimed at improving plant operations management. The software lets end users in maintenance, operations and engineering share information across various technology platforms to address equipment malfunctions or changes in order scheduling.

TransAlta, which uses SAP's R/3 enterprise resource planning software, has gone live with the xApp at one plant in Washington state thus far, said Paul Kurchina, the company's manager of program management. He added that TransAlta plans to extend the application to its other plants during the next 18 months.

Built-in Connections

The software is being co-developed by SAP and NRX Global Corp., a Toronto-based IT systems and services vendor that's also hosting the application for TransAlta. The technology includes built-in connections for accessing various databases, drawings, manuals and documents. The cost and challenges of building those links internally would have been prohibitive for TransAlta, Kurchina said.

"It came together to take out a lot of different pain points," he said, adding that a role-based portal lets end users get alerts and information without even seeing the various applications they're accessing.

SAP officials said NRX plans to sell the plant operations xApp more widely, but a shipment date hasn't been set.

SAP's strategy of getting users, integrators and other vendors on board to develop xApps is sensible, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif. "The potential number of xApps is more than SAP [alone] could bring to market in the next 18 months," he said. ▶

SAP's xApps

- **The cross-applications envisioned by SAP will include built-in hooks** to a mix of systems so users can avoid the need for point-to-point connections.
- **SAP by year's end plans to ship** a resource and program management xApp that's designed for use in managing complex IT and research projects.
- **The company is also working on an xApp to support merger-related financial** and budgeting work that requires data feeds from different systems.

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AOL Takes AIM at Corporate Instant Messaging Users

Security, control enhancements for businesses added

BY TODD R. WEISS

America Online Inc. last week unveiled security and control features designed to give its widely used AOL Instant Messenger (AIM) product the teeth it needs for corporate use.

Dulles, Va.-based AOL said its Enterprise AIM Services (EAS) will give IT administrators more control over instant messaging (IM) use, along with long-desired security and auditing features critical for business use.

The EAS package will include AIM Enterprise Gateway, which is to be installed behind a company's firewall to help provide tighter control over incoming and outgoing messages. Also being offered is ao optional Private Domain Service, which features federated authentication to allow companies to centrally manage users through their existing corporate server directories.

AOL is also providing developer packages and programs so applications can be written to integrate with its IM clieot.

Still missing from the AIM client package for business, however, are encryption capabilities, which are being worked on in beta versions and are due for release by early next year.

The AOL announcement comes a month after Yahoo Inc. in Sunnyvale, Calif., became the first major consumer IM company to announce an eoterprise edition of its IM software, called Yahoo Messenger Enterprise Edition 1.0 [QuickLink 33446].

Rather than redesign a corporate IM client from scratch, AOL is using its existing consumer IM client and wrapping it with the enterprise services package, said Derick Mains, an AOL spokesman. To add security and archiving features, AOL enlisted the help of Foster City, Calif.-based FaceTime Communications Inc., which embedded its technology into the AIM client to provide oeeded features, Mains said.

VeriSign Inc. in Mountain View, Calif., is also working with AOL to integrate encryptioo capabilities by next year.

Making Inroads

AOL hasn't publicized pricing for EAS, since it will depend on variables such as the size of the deployment. However, it's expected to cost about $34 to $40 per seat. The oew services and features, with the exception of the encryption capabilities, are available now.

Michael Osterman, an analyst at Osterman Research Inc. in Black Diamond, Wash., called the business version of AIM "a pretty significant development," because AOL is the leader in the consumer IM marketplace.

"It doesn't have all the features yet," he said. But that probably won't be a problem, because many businesses won't have the money in their end-of-year budgets to deploy it now anyway. By the time IT departments are ready to look into EAS next year, he said, encryption features will be incorporated, making it a compelling product to investigate.

Robert Mahowold, an analyst at IDC in Framingham, Mass., said that one challenge AOL will face is getting IT decision-makers to believe a system that still uses the consumer version of AIM will do the job for them. "AOL has done its due diligence preparing the product," he said. "But they still have to see how the market reacts.

"AOL's first job is to convert the companies that have been informal users to get them to be paying customers," Mahowold said. "I think if they can do that, they win."

AIM is the world's most popular IM client, delivering



more than 1.5 billion instant messages each day, according to the company. There are aboin 180 millioo registered users of the AIM service, including consumers and business users. ▶

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HP, Sun Revamp Channel Programs

Offer partners new incentives for good performance

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co. and Sun Microsystems Inc. last week announced new financial incentives and simpler administration for their respective channel partners, in moves that could result in better product and service delivery for users.

VENDOR PARTNERSHIPS

HP's partnerOne program, which will initially be rolled out to its 20,000 partners in the U.S., replaces about 40 separate programs the company had in place following its merger with Compaq Computer Corp.

PartnerOne will focus a lot more than previous channel programs on helping HP partners grow top-line revenue through joint marketing efforts, said Carl Ramsey, a director in HP's channel organization. For instance, HP is delivering a series of demand-generation and Web-enabled marketing tools for creating direct marketing and e-mail promotions.

The company will also offer more inceotives to partners for achievements such as winning a new account or displacing rivals, Ramsey said. HP has also put in place s unified channel-facing organizatioo to replace the multiple units it had for its various technologies.

"Instead of having 40 different Web sites and 40 different places to go, we now have one face for our partners," Ramsey added.

The program addresses most of the questions channel partners had following HP's acquisition of Compaq, said Geoffrey Lilien, CEO of Mill Valley, Calif.-based HP reseller Lilien Systems Inc.

"There was a lot of uncertainty about what was happening as you looked at the different programs and the different people across both the companies," Lilien said.

The new program has introduced "consistency across the many different programs" and made it easier to work with HP, he said. For instance, the multiple contracting programs that partners previously had to sign up for have been replaced by a single contract.

Suo's new program, meanwhile, is aimed at providing its 800 U.S.-based iForce chan-

What It Takes

TO BECOME A STRATEGIC SUN IFORCE PARTNER:

- At least 10 sales representatives and 10 systems engineers must be Sun certified at the enterprise level.
- Five of these 10 systems engineers also must have a Solaris core certification.

TO BECOME AN HP PLATINUM PARTNER:

- You must have at least 15 technical consultants.
- You must have at least five sales representatives.
- At least four reps must be certified on HP technology.

nel partners with many of the same features.

"We know we needed to continue to improve the value proposition, to simplify how to do business with us and reward those who have been making a significant investment in Sun," said Mike Walsh, a Sun director.

Among Sun's margin-improvement programs is an initiative called the Target Account Program, under which the company will offer special rebates to partners that sell to a specific list of "new-to-Sun" target accounts, according to Walsh. It will also offer special cash rebates to partners that sell only Sun server and storage equipment.

The company's revamp is clearly aimed at rewarding partner loyalty and investment in Sun technology, said Oliver-Poppenberg, a vice president at Perfect Order Inc., a Sun reseller in Mechanicsburg, Pa. Sun's decision to offer incentives to partners that refer users to its professional services is also a good one, be said.

But "more specifics are needed to understand how partners are assigned or can earn a target account," Poppenberg said. ▶

Cybersecurity Tools Proliferate As Spending Remains Steady

New products address continued concerns over threats to corporate data

BY JAIKUMAR VIJAYAN

CORPORATE AMERICA'S willingness to spend money to protect its information assets apparently hasn't been lost on a single security vendor.

This week's Computer Security Conference and Exhibition in Chicago will showcase a plethora of new tools that feature real-time event analysis and correlation capabilities for dealing more efficiently with cyberthreats.

Such products come at a time when some analysts are projecting that spending on IT security will continue to hold steady in 2003 despite a decrease in overall corporate IT spending.

A recent survey of more than 25,000 IT professionals worldwide by Meta Group Inc. in Stamford, Conn., indicates that the number of companies that will spend more than 5% of their IT budgets on security will grow from 33% in 2001 to 55% next year.

"It's a case where you can be penny-wise and pound-foolish," said Josb Turiel, a network services manager at Holyoke Mutual Insurance Co. in Salem, Mass.

Although other areas of Holyoke's IT budget have been trimmed to offset increases in license fees and other fixed costs, security is an area that has been untouched, he said.

"Unfortunately, what's happened after Sept. 11 is that we have more concerns about cyberterrorism and the need to protect ourselves against it," said Thomas Miles, a systems administrator at St. Onge, Ruff & Associates, an architectural engineering firm in York, Pa.

NEW PRODUCTS

Vendors announcing products at the CSI conference include:

LANDCOPE INC.
- StealthWatch Management Console for centralized management of intrusion detection devices.

FORTINET INC.
- SurfinGate content security product.

NEOTERIS INC.
- Instant Virtual Intranet V3.0.

The company has just bolstered its defenses with a firewall from Burlington, Mass.-based Astaro Corp. that combines firewalls with a virtual private network, antivirus protection, content filtering at the application level and user authentication.

Some of the products at this week's show, which is sponsored by the San Francisco-based Computer Security Institute, take a behavior-based approacb to enforcing security, while others are policy-based.

For instance, Waltham, Mass.-based Okena Inc.'s new StormTrack product builds on the company's previous rules and correlation engines and allows companies to enforce authorized application behavior while preventing unauthorized tasks from executing. Okena's suite lets users define policies for acceptable behavior and then uses an agent-based technology to monitor applications and host systems in real time for compliance.

"Okena's approach gives me a little more control over my environment," said Bill Spernow; chief information security officer at the Georgia Student Finance Commission in Atlanta. "It allows me to configure a rules base that, in conjunction with the agents, allows me to see what ports are open or who is accessing a file or touching a registry system," Spernow said.

Similarly, Securify Inc. in Mountain View, Calif., will introduce a suite of tools that allow enterprises to define — and ensure compliance with — a set of rules that specify how network traffic should behave, according to Mark Hangen, the company's president and CEO. Securify's SecurVantage 3.0 product starts at about $50,000.

Other products are aimed at helping companies better gather and manage the data overload resulting from the installation of various security devices around the enterprise. For instance, Bethesda, Md.-based Intellitactics Inc.'s Network Security Manager 4.0 lets companies gather data from firewalls, routers and intrusion-detection devices and translate it into simple language, said CEO Paul Soft.

The technology uses correlation engines and vulnerability information to help administrators prioritize threats and responses. Pricing starts at about $87,000. ◗

MORE ON CYBERSECURITY
Intrusion-detection systems need a lot of fine-tuning. To learn more, see page 34

Continued from page 1

Ameritrade

ture that's based on high-end servers. For example, the Ameritrade trading system is supported by Sun Microsystems Inc.'s Sun Enterprise 10000 Unix servers.

"We like the lower cost of tbe Datek platform, but we're also looking at keeping the same or higher levels of reliability and availabdity [as provided by Ameritrade's systems]," Murphy said. Sbe said Ameritrade is investigating using Linux servers for its new IT infrastructure but will also consider systems such as Windows 2000 and Solaris.

The data center and Web site consolidation efforts are also due to be completed by next summer. Murphy said it's too early to pinpoint the total cost of the integration work.

Ameritrade has two data centers of its own: a primary site in Kansas City, Mo., and a backup site in Omaha. Jersey City, N.J.-based Datek brought with it a data center in Secaucus, N.J. Ameritrade will close the Omaha facility and pick one of the others as its main data center, Murphy said.

On the front end, Ameritrade intends to replace its two online-trading Web sites with a new one that will include features from both brokerages. But the changes will be done gradually to make them evolutionary for users.

"We have two platforms, and in essence you could say that we're abandoning both," said Larry Szczeck, chairman of products and services integration at Ameritrade. "We're taking a bybrid of the two and moving customers to that."

The overall IT integration effort is being led by eight teams that are in charge of areas such as technology integration and end-user experience. Each group reports weekly on its progress to a central integration committee.

Ameritrade is also setting up a team of employees from both companies to work on new applications. "The integration effort is tied to old systems, and we need to get that done for synergies," Murphy said. "But we need to move forward on building new systems." ◗

Integration Plan Includes IT Layoffs

Ameritrade's plan for integrating its operations with Datek's also includes the likelihood of IT staff cutbacks. And that's causing IT managers at the company to do a lot of hand-holding with technology workers who are worried about the upcoming layoffs.

Ameritrade and Datek have a combined IT staff of 450 people, out of 2,100 total employees. Reductions in IT are expected over the next six months as systems get combined and consolidated, said Cecilia Murphy, vice president of technology engineering services at Ameritrade. She wouldn't speculate on how many jobs are likely to be cut.

In particular, some programmers and other IT employees are concerned that the elimination of the systems they work on will also mean the end of their jobs, said Larry Szczeck, chairman of products and services integration at Ameritrade. "That one caught me off guard," he said. "It's a challenge to get people to work together to develop the best system, not 'the best system I used to work on so I'll still have a job.'"

Phyllis Esposito, Ameritrade's chief strategy officer, said one way the firm is combating the rumor mill on layoffs is to issue biweekly integration updates via e-mail. "Communicate frequently, and be upfront," she said. As decisions that could affect employees are made, it's best to "announce them, because things filter through anyway," she added.

– *Lucas Mearian*

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Judge Rejects Web Site Disability Suit

Southwest fends off suit, but looks to make its site more accessible

BY PATRICK THIBODEAU

A FEDERAL JUDGE in Miami last month rejected a lawsuit contending that Southwest Airlines Co. violated the Americans With Disabilities Act (ADA) because its Web site was inaccessible to blind users.

At issue in the case is whether corporate Web sites fall under the aegis of the ADA. In one of the first court decisions on the act's applicability to the Internet, U.S. District Court Judge Patricia Seitz ruled that the ADA concerns physical spaces, not virtual ones. She left it up to Congress to decide whether to broaden the disability law to include cyberspace.

But in a footnote to her 12-page decision, Seitz expressed surprise that Dallas-based Southwest hasn't used "all available technologies to expand accessibility to its Web site for visually impaired customers who would be an added source of revenue."

Southwest spokeswoman Christine Turneabe-Connelly acknowledged that some screen readers — software that converts on-screen text to audio or a refreshable Braille display — may have had compatibility problems with the company's Web site. Southwest is "exploring some possibilities" to make the site more user-friendly for blind or visually impaired users, she said.

Problems with Web site accessibility aren't uncommon, said Edward Resnick, president of Access Now Inc., a Miami Beach, Fla.-based advocacy group that filed the suit. Accessibility is strictly a matter of whether a Web site's designer "programmed it for people who are blind," he said. Access Now and a blind individual claimed in the suit that Southwest's online virtual ticket counters are "extremely difficult" — though technically possible — for the blind to use. The plaintiffs plan to appeal Seitz's decision.

Many companies rush to create Web sites without considering accessibility issues and may later balk at spending money to retrofit their sites, said Jennifer Vollmer, an analyst at Meta Group Inc. in Stamford, Conn. As a rule, she said, building in accessibility during the site design process costs one quarter of retrofitting work.

Web site accessibility "should be a no-brainer," she said. "But it has just not been a priority for companies."

The World Wide Web Consortium has published a set of accessibility guidelines that developers can follow to open up Web sites (see box). But companies also have to increase the accessibility awareness and training of programmers, said Gerry Santoro, an assistant professor of information sciences and technology at Pennsylvania State University in University Park. ▶

Web Site Accessibility Tips

INCLUDE background descriptions of images that can be read by screen readers.

PROVIDE captioning for multimedia.

ALLOW users to stop or pause elements that are moving, blinking or scrolling.

AVOID the use of color by itself to signal links or actions that users could take.

USE headings, lists and a consistent structure to organize pages.

SOURCE: WORLD WIDE WEB CONSORTIUM

Lotus Chief Sets Course in Wake Of IBM's 'On-Demand' Strategy

Zollar focuses on collaboration tools and 'dynamic workplaces'

BY MARYFRAN JOHNSON AND DON TENNANT

Al Zollar is one of the senior executives at IBM who will play a key role in executing CEO Samuel J. Palmisano's new "on-demand" computing initiative [QuickLink 34091]. Zollar, general manager of IBM's Lotus Software Group, spoke with *Computerworld* last week.



Aside from heading Lotus, you're leading an IBM-wide "dynamic workplaces" initiative. Can you explain what that's about? In principle, it's this notion that you walk into any of our typical medium- to large-size customers, and you can probably find somebody working on an e-HR self-service initiative, somebody working on a portal, somebody on e-mail, search, collaboration, e-learning, document management and so forth. The goal of the dynamic workplace is to take all this stuff, integrate it and make it highly [adaptive] to the user role or the business problem that you're trying to address.

How does that fit into IBM's "on-demand" computing vision? And what is Lotus doing to support that strategy? The on-demand initiative is really about the standardization of computing to solve what is one of the great remaining challenges: How do we really make distributed computing work? This is all about creating an ability to have computing viewed as something that is much more dynamically deployable. And the collaborative middleware that Lotus provides is a big piece of this, because it's about how you connect people into this utility or network structure. We think that this is one of the first places that people will look and say, "This looks like a utility to me."

What's the main message you'll deliver at the Lotusphere conference in January? We've been talking about this "next-gen" project, which is the use of J2EE technologies around Lotus' collaborative capabilities. We'll have a lot of updates on that.

What's your reaction to the recent Microsoft ruling? There's no reaction I really have to it, because my attitude on the whole thing was that it didn't exist. What I mean by that is we try to stay focused on customers and presenting a better offer than our competitors. What I think we've seen is that Microsoft, by this ruling, is asked to provide technical information. That's good for the industry and good for customers. The question will be, how much more productive can our people be with what's now being mandated? ▶

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Wireless Start-up Targets 4-Mile Range

BY BOB BREWIN

Start-up Vivato Inc. last week announced plans to market a wireless LAN switch that uses a planar phased-array antenna to support a communications range of more than four miles, compared with hundreds of feet for wireless LAN access points.

Phil Belanger, vice president of marketing at Vivato, said the San Francisco-based vendor is aiming the switch at corporate users who want to implement WLANs in large buildings or campus environments. Other target markets include public-access WLANs and wireless Internet service providers.

The range of an indoor system tops out at about a mile, Belanger said. Vivato envisions users setting up just one outdoor antenna to provide wireless service to an entire office building, eliminating the need for multiple indoor access points. The switch is rated to deliver throughput of up to 800M bit/sec., compared with 11M bit/sec. for 802.11b Wi-Fi products.

Vivato derives its range and throughput from the phased-array antenna, which is similar to devices used on the U.S. Navy's Aegis cruisers to track and identify aircraft. The 2 ft. by 2 ft. square antenna forms electronic beams that send narrow pulses of high-speed data to WLAN clients, Belanger said.

Product Potential

Nelson Ludlow, CEO of Mobilisa Inc., said that given the distance claims, the switch sounds potentially useful. Ludlow plans to do a hands-on evaluation of the technology later this month. His Port Townsend, Wash.-based company is involved in an effort to provide WLAN services on boats operated by the Washington state ferry system.

Phased-array antennas are currently being used in large cellular and military applications, said Craig Mathias, an analyst at Farpoint Group in Ashland, Mass. "I'm a big believer in antenna arrays, and I believe they will see significant deployments in WLAN applications," Mathias said. But, he added, "the technical advantage that Vivato may have is yet to be proven."

Belanger declined to disclose pricing for Vivato's switch, which is expected to ship next quarter. In addition to 802.11b, the switch will support the 802.11a and 802.11g standards, as well as multiple security protocols.

Vivato's announcement came two months after Holtsville, N.Y.-based Symbol Technologies Inc. introduced a WLAN architecture that's built around central switches [QuickLink 32531].

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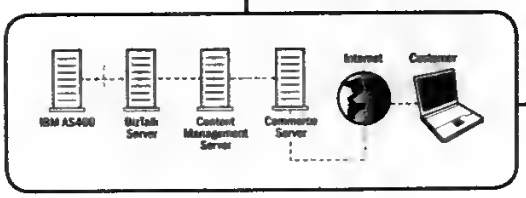
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Microsoft

PATRICIA KEEFE

Verifying Trust

HALLOWEEN MAY BE OVER, but the Nightmare on Data Street is just getting under way for public companies, which now face a web of disclosure and verification regulations spawned by this year's continuing horror show of corporate accounting scandals.



CEOs and CFOs are now required, thanks to this summer's passage of the Sarbanes-Oxley Act, to sign documents attesting to the veracity of their financial data. Some observers say the Securities and Exchange Commission may yet scare up a few more regulations. And why not? Many blame the unbridled greed that led to the ongoing crises at companies like Enron, Tyco and WorldCom for exacerbating the market crash, which sank the stock prices of many companies and the retirement dreams of millions of Americans along with it. Something had to be done.

So a jittery Republican administration did what it hates to do: created new regulations, in this case ones designed to limit, if not stop, corporate fraud. It also ordered up an accounting oversight board to oversee the audit process. Expect more guidelines to follow once the board settles in next year.

What's this got to do with IT? A lot, actually. It's not just a problem for the CEO and CFO. It will land on unprepared CIOs like a too of depositions. You may not have to sign anything, but the key to safeguarding and verifying data accuracy lies within the heart of the financial systems and enterprise infrastructure IT designs and oversees. As Lynn Bruneau, a managing director at risk consultancy Protiviti puts it, "Do you know where your data spent the night?"

Many CIOs see this as no big deal. Financial applications are among the most heavily controlled and monitored systems. Many shops mapped out their IT architectures as part of the Y2k exercise and should be able to reuse those blueprints to explain the "Where did you get this information?" part of the disclosure controls.

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PATRICIA KEEFE

Verifying Trust

HALLOWEEN MAY BE OVER, but the Nightmare on Data Street is just getting under way for public companies, which now face a web of disclosure and verification regulations spawned by this year's continuing horror show of corporate accounting scandals.



Patricia Keefe is a Computerworld editor at large. You can contact her at patricia_keefe@computerworld.com.

CEOs and CFOs are now required, thanks to this summer's passage of the Sarbanes-Oxley Act, to sign documents attesting to the veracity of their financial data. Some observers say the Securities and Exchange Commission may yet scare up a few more regulations. And why not? Many blame the unbridled greed that led to the ongoing crises at companies like Enron, Tyco and WorldCom for exacerbating the market crash, which sank the stock prices of many companies and the retirement dreams of millions of Americans along with it. Something had to be done.

So a jittery Republican administration did what it hates to do: created new regulations, in this case ones designed to limit, if not stop, corporate fraud. It also ordered up an accounting oversight board to oversee the audit process. Expect more guidelines to follow once the board settles in next year.

What's this got to do with IT? A lot, actually. It's not just a problem for the CEO and CFO. It will land on unprepared CIOs like a ton of depositions. You may not have to sign anything, but the key to safeguarding and verifying data accuracy lies within the heart of the financial systems and enterprise infrastructure IT designs and oversees. As Lynn Bruneau, a managing director at risk consultancy Proviti puts it, "Do you know where your data spent the night?"

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Spam Wars
Spammers continue to refine their techniques, while companies enlist technology to block productivity-draining nuisance e-mail. **Page 32**

FUTURE WATCH:
Good Morning, Dave . . .
The Defense Department is working on a self-aware computer that can reason and adapt to surprises. Will it turn out to be a dream computer, or a nightmare out of a science-fiction movie? **Page 36**

The Balancing Act
Despite advances in technology, tuning an intrusion-detection system is a delicate process requiring the right mix of know-how and tools. **Page 34**





DOUG ROSS

WEB IDENTITY: WEIGHING THE ALTERNATIVES

Microsoft's Passport and the Liberty Alliance's Web authentication services take different approaches to Web identity management today, but they may interoperate in the future. By Carol Sliwa

SUPPOSE AN AIRLINE wants to give its online customers access to special offers from its hotel and car rental partners, yet spare those users the bother of logging in each time they link to a new password-protected Web site.

The airline also might want to give its employees access to the secure sites of its 401(k) and insurance providers without forcing them to prove their identities multiple times.

Two of the more prominent options the airline might consider are Microsoft Corp.'s Passport service and future systems based on specifications drawn up by the Liberty Alliance Project, an industry consortium with more than 120 members, whose founders include Sun Microsystems Inc., American Express Co. and United Air Lines Inc.

But IT shops might want to carefully assess their choices for single sign-on and user identity management, because both options are in a state of flux and new Web services approaches could alter the landscape even more.

"You really have to have a driving business need to want to do this now, because of the potential for change," says Randy Heffner, an analyst at Cambridge, Mass.-based Giga Information Group Inc.

In July, the Liberty Alliance Project released its specifications for a standards-based mechanism for simplified sign-on and user identity management. But although vendors have promised products based on those specifications, they have yet to produce them.

The second phase of the specifications — which will include guidelines for site-to-site authentication and user-attribute sharing — isn't due until the first half of next year, says Paul Madsen, a member of the Liberty Alliance's technology expert group and manager for identity services at Addison, Texas-based Entrust Inc.

Microsoft's Passport authentication service, which has primarily targeted consumers, relies largely on proprietary protocols that the company made available last month for inspection and development through its shared source code licensing program. But Passport is expected to shift to authentication tokens based on MIT's Kerberos technology and add support for Web services standards next year. That, in turn, has given many in the industry hope that Passport may someday interoperate with Liberty-based authentication and identity management systems.

Core Differences

Currently, the approaches differ. One major distinction is the location where each model stores and maintains user data. Another is the means by which the systems share a user's authentication status information.

Under the Microsoft service, users register either via *www.passport.com* or a member site that has an agreement with Microsoft. The member site must be running Passport Manager software, which serves as an intermediary between the site's server and the Passport server and helps decrypt incoming cookies.

When a user logs into a member site, he is redirected to a page with the Passport user interface and branding from the referring site. The member site can decide how many of 10 possible fields of information it wants the user to fill in, and the information is stored in Microsoft's Passport servers. Users can opt to share all of that information with other Passport-enabled sites when they sign in, or only their e-mail addresses or names.

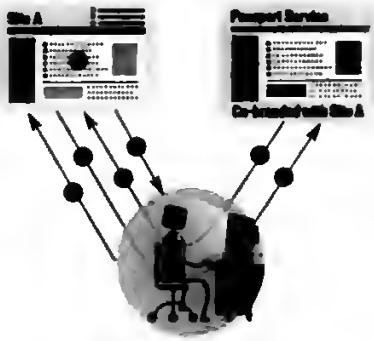
When a user signs in at a participating site, he is redirected to Passport and, if he doesn't have a cookie that meets the referring site's policy, Passport prompts him for a name and password. An encrypted authentication ticket containing the user's information is sent from the secure Microsoft database to the client machine by way of a Web address query string. That ticket is then sent to the member site (see diagram on page 28).

Dwight Davis, an analyst at Summit

TWO APPROACHES TO WEB SINGLE SIGN-ON

Microsoft Passport

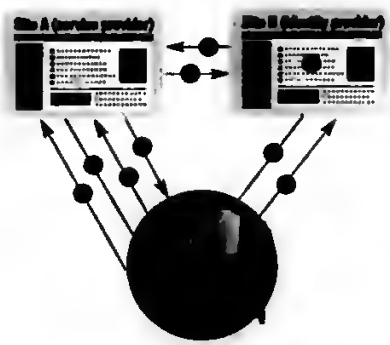
- The user browses to Site A and clicks the Sign In button.
- The site redirects the user request to the Passport server, which checks the user's cookie file for an active ticket. If no active authentication ticket is present, or if the ticket is deemed too old by Site A, the user is prompted for his name and password.
- The Passport service redirects the user back to Site A with an encrypted authentication ticket, which contains a 64-bit unique identifier and profile information (also encrypted) that the user has chosen to share.
- Site A decrypts the authentication ticket/profile information and signs the user into the site.
- The user accesses the page, resource or service requested.



NOTE: This scenario assumes the user has already registered with the Passport service.

Liberty Alliance

- The user browses to Site A (service provider) to access a Web page, resource or service.
- The site redirects the browser to Site B (identity provider).
- The user logs in at the identity provider site, which creates a small SAML authentication assertion artifact.
- The artifact is passed back to Site A.
- Site A sends the artifact to the identity provider via a SOAP request. The artifact represents the actual SAML assertion.
- The identity provider returns the SAML authentication assertion to Site A.
- The user accesses the requested page from Site A.



NOTE: This is only one possible scenario under which Liberty protocols work.

Strategies Inc. in Boston, notes that some companies have been nervous about Microsoft owning the user data, "even if it's only hands-off ownership."

The Liberty Alliance takes a different tack. It has no universal, unique user identifier that is recognized across sites, and no single identity provider that centrally stores user data. Instead, a wide range of sites can serve as identity providers, and these may federate with one another, exchanging authentication tokens via the Security Assertions Markup Language (SAML) and SAML extensions.

Under a Liberty-based system, a user accessing a password-protected site is redirected to the appropriate identity provider. Once there, the user logs in and is redirected back to the original site with a one-time random string called an artifact. The artifact is then presented and exchanged for a SAML assertion, which contains the information the site needs to authenticate the user (see diagram).

In contrast, Microsoft now uses proprietary protocols to transmit authentication tickets between its Passport servers and member sites. Adam Sohn, a product manager in Microsoft's .Net strategy group, says that even when Microsoft adds support for Kerberos-based authentication next year, it will not be "switch flipping" from the current Passport authentication mechanism to Kerberos-based authentication; it will be more gradual, because there are 200 million existing Passport accounts.

Dan Blum, an analyst at Burton Group in Midvale, Utah, says the use of Kerberos has been limited primarily to Windows 2000 users and universities, largely because "the mechanism of setting up the Kerberos trust is cumbersome and requires opening up additional ports in the firewall." Blum says the trust-management and firewall problems should start to be resolved once Microsoft releases its new TrustBridge server software, which will make it possible for two companies to "more conveniently federate authentication and even authorization within the Microsoft model."

Compatibility Issues

But Microsoft's commitment to the binary Kerberos tickets differs from the Liberty Alliance-based specifications, which favor XML-based SAML assertions for user-to-site authentication.

Microsoft has committed to support SAML assertions in its Windows server authorization infrastructure but has yet to pin its support to a particular release or time frame, Sohn says.

Despite the present incompatibility, there are ways to get Passport member sites and Liberty-based sites to share authentication data. For instance, a Web site could support the Liberty specifications, join Passport and essentially serve as a protocol mapper, doing the necessary translations to pass user identity information from one site to another, Madsen says.

Beyond that, he notes that the second phase of the Liberty specifications will include guidelines outlining some site-to-site authentication options, including SAML assertions, Kerberos tickets and PKI-based technologies. But that still won't address the user-to-site authentication technology conflict between Passport's Kerberos tickets and Liberty's SAML assertions, he says.

The greatest promise for interoperability may lie in the proposed Web Services Security (WS-Security) standards that Microsoft, IBM and Mountain View, Calif.-based VeriSign Inc. announced earlier this year and last summer turned over to the Organization for the Advancement of Structured Information Standards in Billerica, Mass.

Madsen says the Liberty Alliance is looking into WS-Security. And Microsoft plans to "lean very heavily" on WS-Security, which can handle different types of security tokens, Sohn says.

Sohn says SAML assertions or Kerberos tickets could be dropped into XML-based messages, which could be sent via the Simple Object Access Protocol (SOAP) to carry user credentials between sites.

"There's no reason any [two] systems can't interact in a trusted manner, whether they're Liberty or Passport or a couple of enterprises interested in integrating their supply chains," he says.

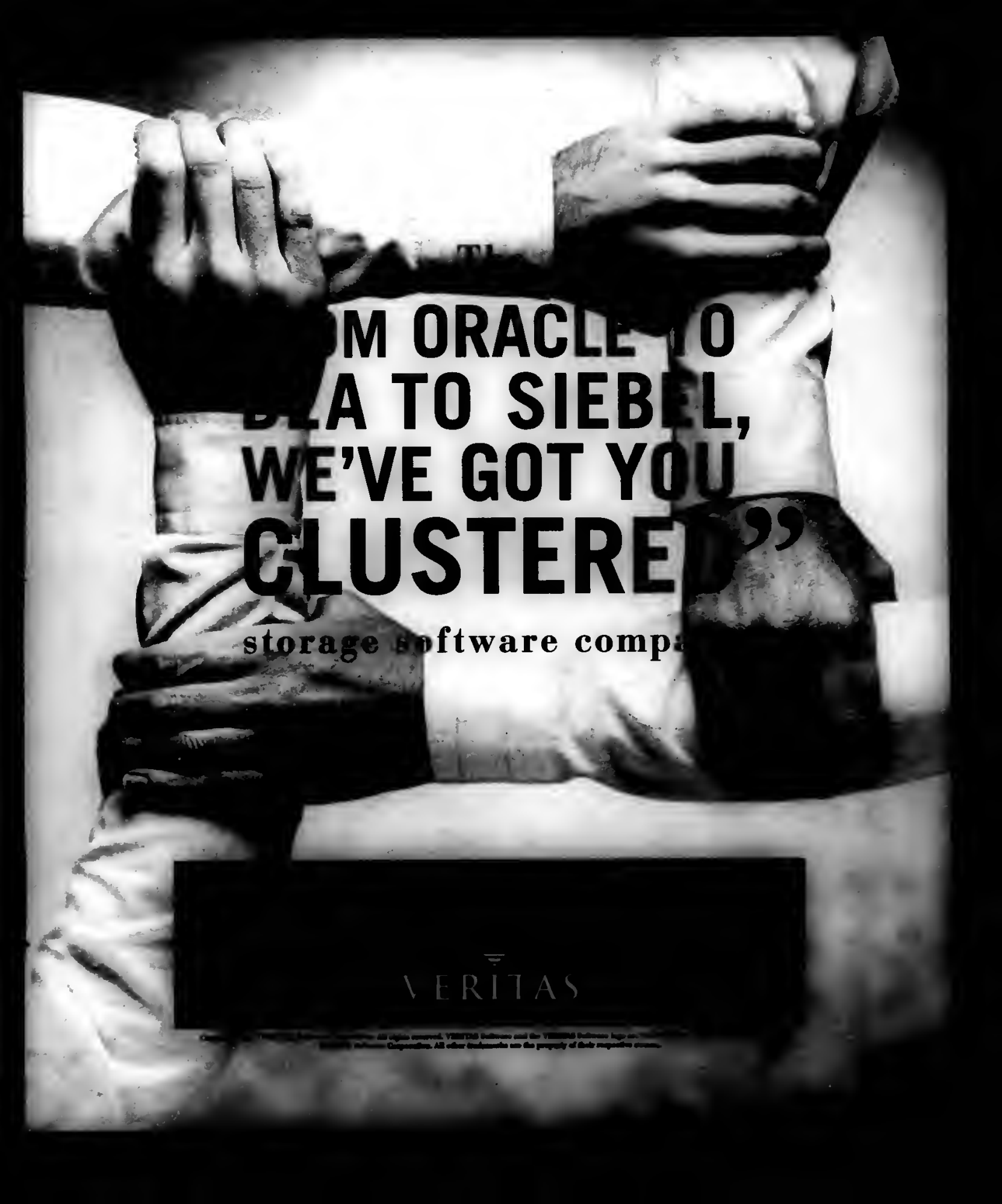
But the underlying systems must be able to understand the different authentication tokens, Madsen cautions. If they can't, some type of service might be needed to perform mapping functions, he says.

It remains to be seen if that will suit the needs of corporate IT managers who don't want to have to support dueling technologies.

"We're waiting for the industry and this space to evolve to a point where we can feel comfortable implementing something that will allow us interoperability and flexibility," says Justin Erbacci, a senior architect at United Air Lines.

Erbacci may have to be patient. Products supporting the Liberty specifications aren't out yet. TrustBridge isn't due until next year. And SAML support through WS-Security may not happen before the second half of 2003 — or later, warns Blum.

"It's going to take a couple of years before we start to see widespread use of federated authentication using any of these techniques," Blum predicts.


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SPAMWAR

As unwanted e-mail eats away at productivity, companies turn to technology to battle the threat, while spammers fight back with new tactics to get their messages through. BY MELISSA SOLOMON

YOU KNOW FROM LOOKING at your e-mail lately that it's possible to be debt-free, have perfect skin and be a babe magnet — with a little help from your new friends.

But at least employees at Stamford, Conn.-based Xerox Corp. are shielded from such revolutionary offers — though the process hasn't been easy. Last summer, Xerox's firewall team was blocking 150,000 spam e-mails a month. By early fall, it was 60,000 messages a day, seven days a week, says Linda Stutsman, manager of corporate information security and risk management.

In the past year, spam has moved beyond personal e-mail accounts, invading business systems and graduating from societal pest to corporate enemy. Companies are stockpiling their arsenals — lists of legitimate senders and known spammers, tools that pick up on spamlike content or behavior, digital fingerprints and decoy e-mail addresses — to fight this invasion. On the other side, however, new and resourceful recruits lured by spam's promise of big financial returns are constantly devising counterattacks.

"There's 10 times as much [corporate] spam this year as there was last year," says Joyce Graff, an analyst at Stamford, Conn.-based Gartner Inc. "It's mind-blowing. And the economics are on the spammers' side."

And, says Jason Catlett, president of Junkbusters Corp., a Green Brook, N.J.-based antispam organization, the problem is getting worse. "Spam is growing at a slightly faster rate than e-mail traffic," he says (see chart, next page).

Weapons of War

The spam weapons that Graff finds most difficult to defend against are harvesting tools. For $39.95, marketers can buy a "spambot" that searches message boards and lists, culling up to 100,000 e-mail addresses in an hour. Spambots also get into the relay game with organizations' message transfer agents (MTA) by sending messages to, for example, georgebrown@whitebouse.gov, georgebuckley@whitebouse.gov and so on, until they find matches.

To combat these spambots, Graff says, organizations need to set up their MTAs so they automatically disconnect as soon as they detect harvesting attacks.

But, says Steve, a Washington-based spammer who asked to be identified by only his first name, spammers are continually finding — and sharing — new ways to hide their identities. For instance, he's created a filter-evading script that randomizes subject lines and source addresses so they're not easily identified as bulk mail. Big-time spammers buy servers that can randomize entire domains, says Steve.

Spammers scan the Internet for open relays in foreign countries so their messages will be hard to trace. Or they set up free e-mail accounts and dump them before they're caught. Spammers can blast out hundreds of thousands of messages, each with customized content and source addresses, and then quickly log out, says Mark Bruno, enterprise product manager at Brightmail Inc., a San Francisco-based vendor that got its start filtering e-mail for service providers but has since shifted its focus to corporations.

Spammers also write programs that load in multiple accounts so when one account is terminated, another automatically kicks in, says Dan Clements, CEO of CardCops.com, a Malibu, Calif.-based online credit card and advertising fraud watchdog group.

It typically takes about two or three months from the time companies install antispam software until they can effectively pick up on patterns. But once they do so, some systems can weed out 90% of spam with a less than 1% false-positive rate, says Joe Fisher, senior product manager at Tumbleweed Communications Corp., a Redwood City, Calif.-based messaging security firm. And then vendors and their clients need to keep updating the tools to stay ahead of the spammers.

"They're just making my job harder," says Steve. "But for them to stop spammers is almost impossible. There's always going to be some guy who knows how to build a new application, and everyone's going to get it."

Some antispam systems claim to stop virtually all spam, which accounts



SOURCE: "ISPs AND SPAM: THE IMPACT OF SPAM ON CUSTOMER RETENTION AND ACQUISITION," GARTNER INC., STAMFORD, CONN.





WORLDWIDE E-MAIL SENT ANNUALLY

BUSINESS	190 billion	920 billion	3.33 trillion	5.58 trillion
PERSONAL	100 billion	660 billion	2.15 trillion	3.57 trillion
TOTAL	290 billion	1.58 trillion	5.48 trillion	9.15 trillion

THE ABOVE TOTALS INCLUDE THE FOLLOWING NUMBERS FOR SPAM MESSAGES

WORLDWIDE	50 billion	290 billion	1.50 trillion	2.92 trillion

SOURCE: "E-MAIL USAGE FORECAST: 2002-2006: KNOW WHAT'S COMING YOUR WAY," IDC, FRAMINGHAM, MASS.

for 34% of all e-mail. These systems contain a variety of components.

- Blacklists that compile and distribute IP addresses of known spammers. There are also whitelists, which companies can build to identify legitimate senders.
- Content-analysis tools that look for keywords.
- Behavioral-analysis tools that look for patterns such as large numbers of recipients or blind copies.
- Address-validation tools that do reverse Domain Name System lookups to ensure the sender isn't trying to cloak his identity.
- Digital fingerprints developed with algorithms and heuristics, to identify and block or filter common spam patterns.
- New products that can scan for graphics such as skin tones to combat pornography, but those tools are still in their infancy, says Mark Levitt, an analyst at IDC in Framingham, Mass.

Brightmail's probe networks, which are getting high marks from analysts and antispam watchdogs, consist of dummy accounts set up through various Internet service providers and corporate clients to attract spammers. Brightmail monitors those networks to detect new tricks of the trade and continually evolves its antispam rule book. New rules are distributed and updated in clients' systems every 10 minutes, says Ren Chin, director of product development at Brightmail.

SPAM WEAPONS

For lists of online antispam resources and prices of e-mail filtering products, visit our Web site

QuickLinks 34114 and 34186
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After going through the battery of antispam indicators, a good filter will assign percentages rating the probability that messages are spam, says Graff. Depending on the comfort level of the organization, messages above a certain level can be automatically deleted, while others can be stored in spam folders for IT staff or users to review.

"This is not a perfect science," says Graff. "If some product claims to do 100%, run away from it, because they don't know what they're doing."

Xerox keeps pace with new commercial tools, but so far it has stuck with its homegrown antispam system, says Stutsman. Xerox also subscribes to blacklists. About 75% to 80% of Xerox's spam is blocked at the gate, and an additional 20% of the remaining spam is later filtered out, says Stutsman.

Staying Alert

When 25% or more of Norfolk Southern Corp.'s inbound e-mail was being identified as spam, Tony Samms knew something had to be done.

"It was a very hostile environment," says Samms, director of information security at the Norfolk, Va.-based freight, natural resources and telecommunications holding company. "Messages showed pictures of people having sex right in the e-mail."

There were also the drains on employee productivity, handwidth and storage to consider. With close to 10,000 users and an average of 30,000 e-mails per day, spam had become a hig financial problem.

So at the end of last year, Norfolk Southern installed IronMail from CipherTrust Inc. in Alpharetta, Ga. The tool sits on Norfolk Southern's gateway and uses an array of filtering strategies. Even with the filter, though, spam has managed to get into Norfolk Southern's system, so employees have been building a local deny list by sending addresses to be hlocked to the information security department.

The higgest challenge has been avoiding false positives, says Samms. "We don't want to block good e-mail, so we have to be careful," he says. For instance, one employee's last name is Rape, so the company can't add that to its list of words to be filtered out.

Samms says the 25% spam rate has been reduced to about 1% or 2%

Santa Clara, Calif.-based Macrovision Inc. has opted for a voluntary spam-fighting program, letting end users decide whether they want to use the PerlMx filters from Vancouver, British Columbia-based ActiveState Corp., which the company installed last spring. Then they customize theur filter settings, so the sales representatives can keep getting newsletters peppered with terms like *invest* and *bargain*, for example, and the mailroom clerks can keep solicitations to a minimum, according to Macrovision system administrator Mike Stevens.

Stevens hasn't calculated the return on the $10,000 investment, but be says productivity has jumped "You get your return oo investment back in a relatively short time," he says. ▶

Solomon is a freelance writer in New York. Contact her at melissasolomon7@hotmail.com.

THE OTHER SIDE

MAIL SERVER APPLICATION to cloak your identity: $1,000. Internet service provider account: $10 a month. Bulk mailing list: $20. For a medievel spammer like "Steve," that investment can be recouped in a day.

Six years ago, Steve bought a list of e-mail addresses to hit with pitches from adult Web sites. Since then, he's grown that list (and its value) about tenfold by trading with other spammers.

And there's the spammer's most powerful tool: his cohorts.

For a $29.99 membership fee, sites like BulkBarn.com offer 300,000 "fresh bulk e-mail addresses" weekly (1 million for another $20), bulk e-mail starter kits and free bulk e-mail software.

"They started out as little script kiddies, and they turned into big companies," Steve says. "People troubleshoot there, just like any other business."

Big business it is – with all the pressures that suggests. In fact, Steve has already entered semiretirement as a spammer at the ripe age of 32. He took a job this year as a Microsoft engineer at a Washington-based government agency. "I was getting too old to do it full time," he says. Still, spamming in his free time, he subsidizes his income by about $40,000 annually.

The problem with spam-fighting tools is that they wage war against the wrong enemies, says Dan Clements, CEO of CardCops.com, an advertising and credit card fraud watchdog group. The true beneficieries of spam are the big businesses that pay spammers a portion of their revenues to bring in new customers, all the while turning a blind eye to their renegade marketing tactics, he says.

Steve concurs, and he even has lists of sites that offer little or no resistance to spamming. As long as he can zap out 400,000 adult e-mail messages, get 30 hits and collect $1,000, he'll keep at it.

While the spam community is strong, so, too, is the antispam community. Organizations such as The Spamhaus Project and the Mail Abuse Prevention System LLC publish information on known spammers. But in order to truly wipe out spam, an international body of law must be created, says Gartner analyst Joyce Graff. And that's at least a decade off, she adds.

In the meantime, even though Steve wishes away the junk mail that clogs his in-box, he still benefits from the way the system works.

"I hate spam," he says. "I've gotten death threats. People have threatened to kill my dog. . . . But when you make a thousand bucks in one day, you could care less."

– Melissa Solomon

Tuning in threats – and tuning out false positives – requires good tools and the right processes and policies to manage them. By Dan Verton

THE SOUND of intrusion-detection systems (IDS) sifting through the torrents of data entering networks and sending alerts about hacker attacks might be music to the ears of most security administrators. But if the IDS isn't tuned properly, those alarms can sound like fingernails scraping a chalkboard.

Despite better event correlation and centralized management consoles, fine-tuning an IDS so that it detects and generates alerts about only bona fide intrusions remains a classic security challenge. The answer to the IDS tuning dilemma rests not so much in technology but in people, processes and policies, say analysts and IT security professionals.

Crying Wolf

IDSs don't seem to work unless users have the time to stand guard with them and investigate every unusual incident, no matter how minor.

IDS tuning involves more than simply configuring the system to look for port scans and other attack signatures (software code that indicates malicious activity). Each IDS must be tuned to detect incidents that are pertinent to the specific network or subnetwork on which it's deployed. And if you try to detect everything, you're asking for trouble, says Bill "Ches" Cheswick, chief scientist at Lumeta Corp., a developer of network security monitoring software in Somerset, N.J.

"This leaves network administrators with two problems: An IDS that misses some things, which can cause sleepless nights, and an IDS that is constantly whining about things that are OK," he says. "Eventually, it cries wolf too much and the overworked network administrator tunes it down, weakens the rules or doesn't check the logs as often. I don't believe this problem is solvable."

Perhaps not, but to make progress, you should know what you want to protect, determine what you'll do if an incident is detected and have trained IDS analysts available, says Steve Prather, director of network services at ViaWest Internet Services Inc. in Denver.

"Companies tend to struggle with their IDS most when they have not properly tuned their system to their environment and their security policy," says Prather. "In some cases, a company may even try to implement an IDS without first putting a security policy in place." And not knowing how you should respond to an incident can be as problematic as not tuning your IDS properly, he says.

"Much of an IDS's effectiveness relies on what the company has stated they will do when an incident occurs," says Prather. "Who responds to what type of alert? At what level do we shut off connectivity or take servers down? This means a company needs a solid incident-response procedure for their IDS to be effective."

"It's more than just intrusion detection; it's intrusion protection," says Jeff Gorball, senior vice president of operations at Kingland Systems Corp., a financial sector e-commerce service provider in Clear Lake, Iowa. "You have to ask yourself, What am I trying to protect, and what or who am I trying to protect against?"

Gorball set up his IDS as part of a larger defense-in-depth security architecture. He uses increasingly tougher IDS rules as traffic passes through the network's rings of defense. "If you set up your alerts for those rings that are inside the outer rings, you'll have fewer alerts to reckon with," Gorball says.

The Right Technology Mix

But can a few IDSs alone do the job? Not by a long shot, say experts. For example, most companies should have multiple IDSs deployed throughout the organization, including network-based IDSs, which monitor network connections; host-based IDSs, which monitor server and workstation activity; and a mix of signature-based and knowledge-based IDS technologies.

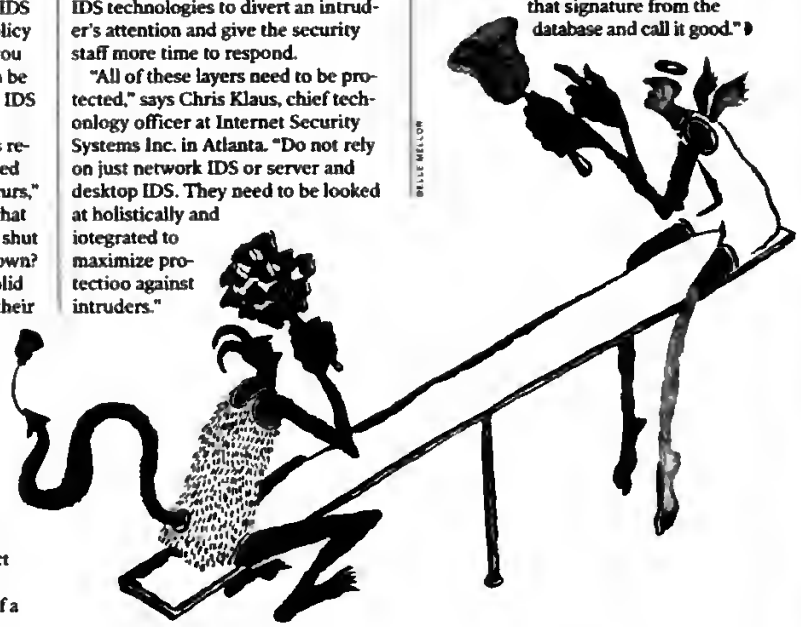
Knowledge-based IDSs tune themselves to your network environment and look inward to learn how to spot anomalies or unusual behavior — a critical capability today, when most security incidents originate from inside the firewall. In addition, some experts recommend using decoy servers, called honey pots, in conjunction with IDS technologies to divert an intruder's attention and give the security staff more time to respond.

"All of these layers need to be protected," says Chris Klaus, chief technology officer at Internet Security Systems Inc. in Atlanta. "Do not rely on just network IDS or server and desktop IDS. They need to be looked at holistically and integrated to maximize protection against intruders."

While some IDS vendors have come out with systems that are capable of active response to real-time intrusions, Mike Stute, CTO at Global DataGuard Inc. in Dallas, recommends that users stay away from this feature. "In general, this doesn't work well. Human intelligence is required to respond appropriately," he says.

But there are other ways you can inadvertently kill your IDS deployment project, says Gorball. "When you first put it online, you're going to want to do so in monitor mode to make sure the rules you've set up will not adversely impact your workflow when you put it into an active state," he says. "If you don't get the rules exactly right, you could leave vulnerabilities in place or, worse yet, kill legitimate traffic."

And there's only one way to get the rules right, says Stute. "It takes constant human involvement. Tuning reduces false positives but creates false negatives. Once someone is paged 30 times a night for five nights and finds that in all cases it was a false [alarm], most administrators will just remove that signature from the database and call it good."

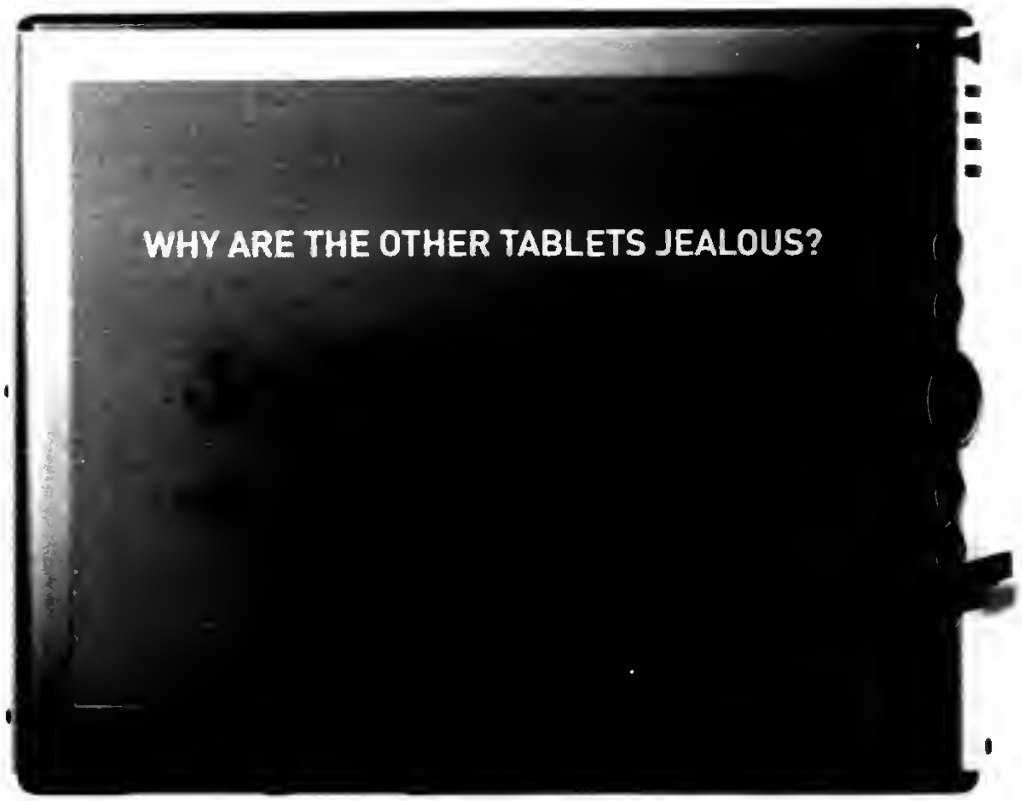


IDS TECHNOLOGY ADVANCES

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Good Morning, Dave...

The Defense Department is working on a self-aware computer. By Kathleen Melymuka

ANY SCI-FI BUFF knows that when computers become self-aware, they ultimately destroy their creators. From *2001: A Space Odyssey* to *Terminator*, the message is clear: The only good self-aware machine is an unplugged one.

We may soon find out whether that's true. The Defense Advanced Research Projects Agency (DARPA) is accepting research proposals to create the first system that actually knows what it's doing.

The "cognitive system" DARPA envisions would reason in a variety of ways, learn from experience and adapt to surprises. It would be aware of its behavior and explain itself. It would be able to anticipate different scenarios and predict and plan for novel futures.

"It's all moving toward this grand vision of not putting people in harm's way," says Raymond Kurzweil, an artificial intelligence guru and CEO of Kurzweil Technologies Inc. in Wellesley Hills, Mass. "If you want autonomous weapons, it's helpful for them to be intelligent."

FUTURE WATCH

Cognitive systems will require a revolutionary break from current computer evolution, which has been adding complexity and brittleness as it adds power.

"We want to think fundamental, not incremental improvements: How can we make a quantum leap ahead?" says Ronald J. Brachman, director of DARPA's Information Processing Technology Office in Arlington, Va. Brachman will manage the agency's cognitive system initiative.

The goal is to create systems that take better care of themselves, and some manufacturers have already made small advances, Brachman points out. Software that tests itself automatically is a step in the right direction. So is software that walls itself off to avoid taking down the larger system in case it crashes.

Add advances in speech recognition and machine learning, and there may be enough "bits and pieces" to achieve the critical mass necessary for a real breakthrough, Brachman says.

"You get enough really smart people working on a really hard problem, and you get outcomes you didn't really expect," he adds. "We're hoping for a little serendipity."

They'll need it. The problems to be addressed are nearly as imposing as the dream. For example:

- How can a cognitive system learn from experience and use what it has learned to cope with new situations?
- How can it prioritize "standing orders," given complex and conflicting goals?
- How can it recognize important low-frequency events among the huge amounts of data in its "experience?"
- How can it use context to decipher complex actions, events and language?

Undaunted

Despite the challenges, Brachman is undaunted. "DARPA is about looking out of the box, the big reach," he says. "If we succeed, we can change the world in very dramatic ways."

Kurzweil agrees. "DARPA research tends to be visionary, and [although it] provides building blocks for future weapons systems, there's also applicability throughout society," he says. For example, DARPA's research and development on advanced communications led to the Internet. Its pattern-recognition advances led to technology that helps guide cruise missiles, reads electrocardiograms and detects computer fraud. The machine vision advances DARPA has funded have obvious value for satellites and aircraft as well as factory robots.

Brachman says cognitive systems could assist or replace soldiers on hazardous duty or civilians responding to toxic spills or disasters. It's not possible to preprogram a response to an emergency, but a cognitive system could size up many complex variables and chart its own course. A system that could imagine multiple scenarios could outsmart terrorists — or your business competitors — by envisioning actions they might take and assessing each for plausibility and impact. People can be blinded by prior experience and biases, Brachman notes, but a computer with no preconceptions could show humans how to think differently.

Moreover, self-explaining, self-debugging systems would require virtually no training and little maintenance. They would learn, not crash, when faced with a new situation.

But what about HAL 9000 and the other fictional computers that have run amok? "In any kind of technology there are risks," Brachman acknowledges. That's why DARPA is reaching out to neurologists, psychologists — even philosophers — as well as computer scientists. "We're not stumbling down some blind alley," he says. "We're very cognizant of these issues."

The solicitation is open to anyone, and DARPA won't speculate about who might step forward, for fear of limiting responses.

The project will have a three- to five-year life — long enough, Brachman hopes, to prove the value and plausibility of the concept. "We don't expect a full-fledged artificial assistant in four years," he says, "but that should be enough time to start getting some concrete indications that some of these dreams are possible."

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@earthlink.net.

Freewheeling Zealots in Pursuit Of Their Goals

DARPA is an anomaly in the federal government: an agency designed and operated to be small and nimble – a counterpoint to traditional Defense Department thinking and procedure.

Established in 1958 in response to Sputnik, DARPA's mission is to apply state-of-the-art technology for military purposes and to keep the U.S. from being surprised again. But its initiatives have had broader applications. For example, DARPA was instrumental in the development of the mouse, hypertext, TCP/IP protocols and the Internet itself.

Reporting to the director for defense research and engineering, DARPA remains small (240 people), flat and free of bureaucracy. It has a $2 billion budget and 140 technical staffers drawn from industry, academia and government labs and research centers for three to five-year rotations to ensure a constant influx of fresh thinking.

Projects such as DARPA's cognitive systems initiative are typically funded at $10 million to $40 million over four years, with one program manager, five to 10 contracting organizations and two universities working toward one goal. Although a new project may later be started in the same area as one that has ended, it isn't an extension and must win approval on its own merits.

According to DARPA, program managers are selected to be "technically outstanding and entrepreneurial, freewheeling zealots in pursuit of their goals." And senior management has protected their independence to enable them to investigate ideas and approaches that the traditional R&D community finds too outlandish or risky. Aside from the requirement that taxpayer funds are used responsibly, there are virtually no rules, and failure is acceptable if the potential payoff is high enough.

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Moreover, self-explaining, self-debugging systems would require virtually no training and little maintenance. They would learn, not crash, when faced with a new situation.

But what about HAL 9000 and the other fictional computers that have run amok? "In any kind of technology there are risks," Brachman acknowledges. That's why DARPA is reaching out to neurologists, psychologists — even philosophers — as well as computer scientists. "We're not stumbling down some blind alley," he says. "We're very cognizant of these issues."

The solicitation is open to anyone, and DARPA won't speculate about who might step forward, for fear of limiting responses.

The project will have a three- to five-year life — long enough, Brachman hopes, to prove the value and plausibility of the concept. "We don't expect a full-fledged artificial assistant in four years," he says, "but that should be enough time to start getting some concrete indications that some of these dreams are possible." ◗

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@earthlink.net.





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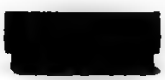
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Stalking Elusive Access Points

An integrity checker reinforces security walls, but rogue APs continue to open holes from within. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

LATELY I'VE BEEN having a problem getting Tripwire and our enterprise backup software to work together.

I recently purchased the file-integrity-checking software from Portland, Ore.-based Tripwire Inc. to serve as an additional security layer after recent mergers wreaked havoc with my company's intrusion-detection system infrastructure. The problem involved the backup software's manipulation of file attributes, which in turn led Tripwire to generate false alerts. We tweaked the policy files as a work-around.

That problem resolved, I still had to roll out the Tripwire agents to all of our servers. To aid in the distribution of those Tripwire agents, I created a Web site with installation software and instructions. For each distribution, I created either a shell script or batch file that automates the installation process on our Unix and Windows NT servers.

Now when we direct systems administrators to install these applications on a system, we can point them to the Web site. They then download, extract and run the script or batch file, and the software installs itself automatically. After the install is completed, the administrator contacts the SecurID or Tripwire administrator, who adds the resource to the appropriate application management console.

Meanwhile, my efforts to build an enterprise wireless LAN — and eliminate unauthorized WLAN installations companywide — seems to take a new twist every day. I'm still evaluating products, but my shortlist includes Cisco Systems Inc.'s Aironet hardware and San Mateo, Calif.-based AirWave Wireless Inc.'s AirWave Management Platform software.

Unfortunately, the Cisco access points (AP) don't support rogue AP detection, and the salesperson says that won't happen until next year. Considering the problems I've been having with users installing unauthorized, insecure APs, rogue AP detection is high on my list of desired features. In fact, I won't agree to deploy a WLAN infrastructure without it.

If we do choose Cisco, it will be because of the company's market position. It's financially stable, our company already has a relationship with it, and we know we can count on Cisco for support. In contrast, the other companies we've looked at are all small and management has been reluctant to purchase equipment from them.

> **Rogue AP detection is high on my list of features. In fact, I won't agree to deploy a WLAN infrastructure without it.**

Until we have a WLAN system with rogue AP detection capabilities, I'm still stuck finding a way to locate those illegal APs I've detected in our buildings. These APs are configured with wide-open security settings, providing open on-ramps to our LAN infrastructure.

I detected them by equipping my Compaq iPaq with an AirMagnet Handheld PC Card and detection software from Mountain View, Calif.-based AirMagnet Inc. I can pick up the signals, but I can't tell where the APs are. A management e-mail demanding the removal of these devices seems to have had the opposite effect.

Homemade Tools

My initial attempts at finding the rogue devices via some of the known LAN media access control (MAC) addresses were unsuccessful, due to some outdated wiring closet maps. So I decided to try to pinpoint the locations using wireless technology. AirMagnet uses an omnidirectional antenna. I needed a directional antenna to zero in on the exact source of the signal. Initially I was going to buy one, but after hearing from readers, I decided to try making one myself. I used instructions I read in Rob Flickenger's weblog (*www.oreillynet.com/cs/weblog/view/wlg/448*).

Although Flickenger used a Pringles potato chip can, I substituted a metal tennis ball can, as suggested by readers. It didn't work. I assembled the thing as instructed, placed a Cisco Aironet AP1200 in an unoccupied office and tried to use my device to home in on the signal. The readings were inconsistent. So much for saving money.

Purchasing a commercial directional antenna could be my next step, but it may be more efficient to find these APs by using the LAN MAC addresses and tracing those back through our Cisco switches to the local wall jack. This should at least work in those building areas where I have accurate wiring maps. But the APs have both radio and LAN MAC addresses, which differ from each other, and I can detect only the radio address. I need some way to match up that radio address to the LAN MAC address I can see on the switches.

I thought I found a way to do this. The first three octets (24 bits) of any MAC address form the organizationally unique identifier (OUI). By looking up this number in an IEEE Web site registry, you can determine the AP manufacturer's name. That should have made discovering an AP's LAN address easier, since the vendor name on the radio and LAN MAC addresses should be the same — and the vendors of the consumer-grade rogue APs most likely will differ from those of our regular LAN hardware.

Unfortunately, I discovered that the vendor's name may not be the one that appears on the OUI, and even the OUI names in the radio and LAN MAC addresses can differ. I experimented with an AP from Rockville, Md.-based 3e Technologies International Inc. After querying the IEEE database, I discovered that the radio OUI was registered to one Taiwanese company and the LAN OUI to another. Neither identified 3e Technologies.

So, has anyone got a better idea? I welcome your comments in the security forum.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum:

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BRIEFS

Brio Software Launches Business Intelligence Suite

Last week, Santa Clara, Calif.-based business intelligence applications provider Brio Software Inc. announced its Brio Performance Suite 8. The product offers a consistent interactive user interface across all its tools, as well as integrated reporting and business intelligence features. Pricing starts at $150,000 for the entire suite. The software will be generally available next month.

Cisco Offers Ethernet Switch Upgrade

Cisco Systems Inc. last week announced the Cisco Catalyst 2950 Long-Reach Ethernet Switch to provide networkwide intelligence such as quality of service, network availability and network security over existing telephone lines for small and midsize businesses and multitenant buildings.

Long-Reach Ethernet switching has been available for 18 months, providing bandwidth of 2M to 15M bit/sec. over existing copper wiring for up to 5,000 feet. The new 2950 adds Layer 3 and 4 network intelligence features. Pricing for an eight-port switch is $1,895 and for a 24-port switch is $4,495. Both are scheduled to become available next month.

Trucker Converts Vehicles to Aether MobileMax

Owings Mills, Md.-based Aether Systems Inc. has announced that carrier J&R Schugel Trucking Inc. in New Ulm, Minn., has equipped its entire fleet of 600 trucks with the Aether MobileMax system for wireless vehicle tracking and messaging. The MobileMax system transmits dispatch and data messages and Global Positioning System reports. It also provides data on state-line crossings, vehicle fault codes and driver performance.

NICHOLAS PETRELEY

PHP and Python Hit Prime Time

IT'S STRANGE TO SAY that PHP (Hypertext Preprocessor) has only recently reached the point where it's ready for prime time, since PHP is already the most popular Apache module, running on almost 10 million domains (over a million IP addresses).



Nevertheless, I've had some reservations about PHP until recently, especially with respect to potential security holes. Then I downloaded and installed the latest version of FUDforum, an open-source PHP-based Web discussion forum package I use for my oonprofit Web site, *VarLinux.org*. You can get an idea of what FUDforum looks like by visiting *www.varlinux.org/forum*. But what you should really examine is the PHP code behind FUDforum, which you can download from *http://fud.prohost.org*.

At some point when I wasn't looking, PHP matured to a point where one could easily avoid the security holes that plagued some old PHP programs. This is especially true if you take an object-oriented approach to building your PHP applications.

Another good example of high-quality PHP programming is phpWebSite (*http://phpwebsite.appstate.edu*), a Web content managemeot system with several good snap-in expansion modules, including one that lets you create e-mail accounts for CommuniGate Pro, an increasingly popular drop-in replacement for Microsoft Exchange. The CommuniGate Pro e-mail and groupware server (*www.stalker.com*) has a built-in Web interface for e-mail that you can integrate into the site you manage with phpWebSite.

The only thing I haven't yet seen done well in PHP is an open-source Web-based groupware application. Yahoo did a pretty good job designing its Web-based calendar (*http://calendar.yahoo.com*). It even allows you to synchronize your data with a Palm device. But most IT departments are going to want to host their own calendars and groupware, and if there's anything that's been done in PHP that is of comparable quality to what Yahoo came up with, I haveo't found it. There is at least one deceot commercial offering, Internal Affairs (*www.internalaffairs.de/en/*), and several open-source projects are in the works, a promising one being PHProjekt (*www.phprojekt.com*). But none of the ones I've tried exploit the maximum potential of the PHP platform.

Love That Python

Of course, there's more to life than PHP. One of my favorite programming languages is Python (*www.python.org*). It seems I don't go a week these days without someone asking me what I know about Python, so it seems to be gaining quite a following in mainstream IT.

Admittedly, Pythoo is a love-it-or-hate-it language, but those who love it claim to be far more productive than with any other language. Being on the love-it end of the spectrum, I'd argue that it's a well-founded claim.

But Pythoo hasn't gotten much past the promising stage for Web applications development. Until receotly, Webware has beeo the best choice for Pythoo programmers (*http://webware.sourceforge.net/*). Webware is very nicely dooe, but its one weakness is that you need to run a Python-based application server in parallel to your Web server. In cootrast, PHP integrates directly into the Apache Web server through a plug-in module.

There's nothing inherently wrong with the Webware approach, but it is difficult to tell bow much overhead Webware will add to your applications. Webware simply hasn't been around the block as many times as comparable Java-based application servers.

Spyce is a newcomer to the Python Web applications approach, and it may not only push Webware off the map, it could also eventually give PHP a run for its money (*http://spyce.sourceforge.net*). Spyce lets you embed Python code into your HTML in basically the same way you would if you used Webware and Python Server Pages. But Spyce doesn't need a separate application server to work. Spyce piggybacks off the Python or fast-CGI modules available for Apache.

I haven't done much more than a few minor exercises with Spyce, but so far I'm extremely impressed. The library of Web features for session management, cookies, forms, pooled variables and other Web applications goodies makes it surprisingly easy to toss together a prototype to see if it's worth using for your next project. If you even have a passing interest in Python, I recommend that you give Spyce a look.

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Finding the T in TCO

Calculating the total cost of ownership for desktop systems is becoming a tricky task, as workers' desktops often comprise more than just a PC. IT departments must now figure in costs associated with laptops, PDAs, cell phones and wireless service connections. **Page 48**



A Squeezed Supplier Never Forgets

Anyone can cut supplier costs in a buyer's market. Suppliers expect you to play hardball, demanding significant price cuts. But don't squeeze too hard. It's bound to leave your suppliers angry and waiting for revenge, advises columnist Bart Perkins. **Page 52**

QUOTE OF THE WEEK

"CIOs have become very risk-averse. . . . The best way to not have things blow up is to not put new things in the mix. There's a challenge for CIOs to move to being focused on how technology can help . . . major business initiatives.

– John Hagel III, consultant and book author, on the reluctance of investing in Web services. Page 52

KNOW YOUR PARTNER

Including vendors on IT teams bolsters project expertise but at the risk of exposing far too much inside information. Here's how to get the most out of trusted allies while foiling corporate spies. **BY KATHLEEN MELYMUKA**



MIMI MORAN'S IT client services group handles all the moves, adds and changes for hardware and software at the Framingham, Mass., offices of Genzyme Corp., a biotech company. All 51 people in the group have badges that allow access to Genzyme buildings, offices, cafeteria, closets and cubicles. They all use passwords to roam through the corporate intranet and most systems. But 30 of them aren't Genzyme employees at all. They're contractors from Siemens Business Services Ltd. in Berkshire, England.

Moran, director of IT client services, makes virtually no distinction between her Genzyme and Siemens employees. "If you deny them access to your business and your systems and then ask them to handle the technology, how are they going to do it?" she asks. "We don't make a distinction. It's a trust thing."

Some would say Moran is asking for trouble. "A manager who says vendors are part of the team has drunk the Kool-Aid," says Phil Bode, director of training at International Computer Negotiations Inc., an IT procurement consulting firm in Winter Park, Fla.

Bode says vendor services people are also informatioo gatherers who learn everything they can about customer operations and report it back to their vendor employer.

"Vendors are in business to make money and to grow sales," says Larry Graham, vice president of IT vendor manageneot at San Mateo, Calif.-based Inovant, a transaction-processing subsidiary of Visa International Inc. "On average, they will do whatever is ethically reasonable to help them do that."

"If vendors are on the premises, and they hang around and drop in on meetings and talk to people, they'll know far more than they should know about future projects, and that gives them an advantage in negotiations" for future contracts, agrees Dave Weidenfeld, managing counsel for McDonald's Corp. in Oak Brook, Ill.

What goes on in your company is your company's business, Graham adds, and the more inside information a vendor gains, the less control you have over the relationship and the more the vendor can use that information to procure additional work or freeze out competitors. "Too much information becomes like a loose cannon," Graham says. "Where will it go and how will it be used? You don't know."

Are the vendors in your ranks trusted allies or corporate spies? Do you trust in their good intentions, share information and access privileges and work as a team, or keep them at arm's length, batten down the hatches and accept the productivity trade-off? "There is a risk that if you bring people in, they're going to learn things," says Weidenfeld. "Yon trade that for increased productivity or more effective project work."

"This is an especially big issue as more and more companies look at their core competencies and realize they need to partner for things they don't excel in," says Andrew Shimberg, an analyst at The Con-



cours Group, a consulting firm in Kingwood, Texas.

Bode says every vendor wants to know three things: What's your budget? When do you need to start and stop? And who's going to make the decision? "If I can get any of that for an upcoming project, I can circumvent the procurement process," he says (see "Cons" box below).

Some clients make it easy. "We give them keys to the company store," Bode says. A vendor with access to the physical plant might see charts about upcoming projects on bulletin boards; information about budgets, timelines and project leads on conference room whiteboards; or data left carelessly on a desktop or even on a PC screen.

An unscrupulous vendor could even nose around after everyone has left for the day. "Many of our people came from that side, and we know that this happens," Bode says.

Vendors disagree. "This is the first I've heard of this tactic by any vendor," says Jonathan Thompson, a spokesman for the Software & Information Industry Association in Washington. "I find it hard to believe that a supplier company would risk losing the client's loyalty and continued support through unsavory tactics."

Bode stresses that he's not questioning the ethics of the industry. "We don't think all vendors are unscrupulous," he says, "but information is power, and we want a fair deal."

Ethical or not, vendors ought to be treated with care, says Gopal K. Kapur, president of the Center for Project Management, a consulting firm in San Ramon, Calif.

"When people walk around, they listen and see and learn, and they're going to use it," Kapur says.

But there are undeniable benefits from giving onsite vendors access. "If they're doing tech services like a help desk inside IT, that's enabling to the business," says the Concours Group's Shimberg. "You need to integrate the help desk process with your other processes, which should also be integrated with the business. If you keep that at arm's length, it will feel that way to business customers as well." ◗

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@earthlink.net.

FINDING A HAPPY MEDIUM

The key is to find a balance in building a relationship with a vendor, says Tony Romero, CIO at Mitsubishi Motor Sales of America Inc. in Cypress, Calif. "We make our vendors part of the project team," he says. "We give them access to whatever they need to do the project – not access to the whole world, but access."

That means they attend project meetings, work side by side with Mitsubishi people and sometimes even have desks. But their access to the building is restricted to certain areas, and security personnel know when they come and go. Their access to systems is also limited. "They get access only to what they need to do a project," Romero explains. "They might have access to one specific server or to one specific application on a server."

Romero's IT staffers also make a distinction. "Our people are very careful about talking with vendors," he says. "They treat them as team members, but they remember they are still vendors."

Romero's approach shows that managing vendors on-site isn't rocket science, but it does require some thought, which isn't always a given. "The majority of companies don't even think about what access should be given," says Gopal K. Kapur, president of the Center for Project Management.

A good time to think about it is while negotiating the contract with the vendor, says Genzyme's director of IT client services, Mimi Moran. As you discuss in detail what vendors will do, you can also define the access they will need. Larry Graham, a vice president at Inovant, suggests asking a simple guiding question about vendor access, such as, Why do you need that?

Dave Weidenfeld, managing counsel for McDonald's, says his company sometimes goes a step further to allay suspicion that a vendor is feathering its nest. "We have a contract that effectively says while they're here, they cannot solicit new business" with us, he says.

But vendor access is only half the issue. "Companies need to orient their own team members on security," Kapur says. For example, what type of meeting do you invite vendors to attend? Who gets to sit in on budget meetings in which you discuss next year's plans? Do your employees leave sensitive information on their desks or accessible on their PCs? Does your CIO know what not to talk about when meeting with a vendor exec? "A vendor may simply ask, 'What are your plans for next year?' and if someone blurts it out, it's gone," Kapur says.

Kapur also includes a security protocol item in every project charter. That makes it a point of discussion and forces the team to think about it before the project begins. "You don't get people in a plane and do security checks at 30,000 feet," he says. "You do it before you take off."

– *Kathleen Melymuka*

"We make our vendors part of the project team. We give them access to whatever they need to do the project – not access to the whole world, but access."

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PROS

A TRUSTING RELATIONSHIP BRINGS RESULTS

"I treat my Siemens manager the way I treat my Genzyme manager," says Mimi Moran, director of IT client services at Genzyme. "I don't make the distinction that he works for someone else; he works for me."

The 30 Siemens workers in her 51-person client services group go through Genzyme's orientation. They have the same unfettered physical and virtual access as most Genzyme employees so they can repair and deliver equipment to desktops throughout the company. They eat at the cafeteria and attend IT-sponsored events.

Recently, the CIO decided to give IT personnel a denim shirt with a newly developed IT logo. "We were going to put a little 'Genzyme' on some and 'Siemens' on the others, but the CIO said, 'No, everybody is IT,'" Moran recalls.

"We will trust them to perform just like everybody in the organization," she says. "We don't hold things back."

It seems to be working. When the group started the engagement three years ago, it had a customer satisfaction rating of 3.8 on a scale of 5. Today, it's more than 4.4. "I know it's business, but they do an awful lot for us because we have a good relationship," Moran says. "If we didn't, would they go that extra mile?"

– *Kathleen Melymuka*

CONS

THE VENDOR THAT KNEW TOO MUCH

Once, while working on a project for a client, Phil Bode's International Computer Negotiations IT team was doing preliminary planning for a wide-area network. "We were trying to figure out how to do it," he recalls. "There were charts up on the wall."

An employee of the company's long-distance carrier who had access to the facility came in and saw the charts. "He knew the timeline, and he got a pretty good idea of the budget from talking to people," Bode says. With this information, the vendor put together a proposal, and the sales rep approached the CIO, a golfing buddy. He talked the CIO into awarding his company the contract rather than following the request-for-proposals (RFP) process.

Inside information and a too-friendly relationship with the CIO enabled the vendor to circumvent and control the customer's procurement process, and things went downhill from there. Because there was no RFP, the project requirements were never nailed down properly. Because multiple bidders weren't heard from, no new ideas or approaches were considered, and there was no competition over price. "It was over time and over budget, and we wound up spending more in service charges each month than we thought we would," Bode recalls. "It was one of the worst projects I ever saw."

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VENDOR ACCESS TIPS

cours Group, a consulting firm in Kingwood, Texas.

Bode says every vendor wants to know three things: What's your budget? When do you need to start and stop? And who's going to make the decision? "If I can get any of that for an upcoming project, I can circumvent the procurement process," he says (see "Cons" box below).

Some clients make it easy. "We give them keys to the company store," Bode says. A vendor with access to the physical plant might see charts about upcoming projects on bulletin boards; information about budgets, timelines and project leads on conference room whiteboards; or data left carelessly on a desktop or even on a PC screen.

An unscrupulous vendor could even nose around after everyone has left for the day. "Many of our people came from that side, and we know that this happens," Bode says.

Vendors disagree. "This is the first I've heard of this tactic by any vendor," says Jonathan Thompson, a spokesman for the Software & Information Industry Association in Washington. "I find it hard to believe that a supplier company would risk losing the client's loyalty and continued support through unsavory tactics."

Bode stresses that he's not questioning the ethics of the industry. "We don't think all vendors are unscrupulous," he says, "but information is power, and we want a fair deal."

Ethical or not, vendors ought to be treated with care, says Gopal K. Kapur, president of the Center for Project Management, a consulting firm in San Ramon, Calif.

"When people walk around, they listen and see and learn, and they're going to use it," Kapur says.

But there are undeniable benefits from giving on-site vendors access. "If they're doing tech services like a help desk inside IT, that's enabling to the business," says the Concours Group's Shimberg. "You need to integrate the help desk process with your other processes, which should also be integrated with the business. If you keep that at arm's length, it will feel that way to business customers as well."

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@earthlink.net.

PROS

A TRUSTING RELATIONSHIP BRINGS RESULTS

"I treat my Siemens manager the way I treat my Genzyme manager," says Mimi Moran, director of IT client services at Genzyme. "I don't make the distinction that he works for someone else; he works for me."

The 30 Siemens workers in her 51-person client services group go through Genzyme's orientation. They have the same unfettered physical and virtual access as most Genzyme employees so they can repair and deliver equipment to desktops throughout the company. They eat at the cafeteria and attend IT-sponsored events.

Recently, the CIO decided to give IT personnel a denim shirt with a newly developed IT logo. "We were going to put a little 'Genzyme' on some and 'Siemens' on the others, but the CIO said, 'No, everybody is IT,'" Moran recalls.

"We will trust them to perform just like everybody in the organization," she says. "We don't hold things back."

It seems to be working. When the group started the engagement three years ago, it had a customer satisfaction rating of 3.8 on a scale of 5. Today, it's more than 4.4. "I know it's a business, but they do an awful lot for us because we have a good relationship," Moran says. "If we didn't, would they go that extra mile?"

– Kathleen Melymuka

CONS

THE VENDOR THAT KNEW TOO MUCH

Once, while working on a project for a client, Phil Bode's International Computer Negotiations IT team was doing preliminary planning for a wide-area network. "We were trying to figure out how to do it," he recalls. "There were charts up on the wall."

An employee of the company's long-distance carrier who had access to the facility came in and saw the charts. "He knew the timeline, and he got a pretty good idea of the budget from talking to people," Bode says. With this information, the vendor put together a proposal, and the sales rep approached the CIO, a golfing buddy. He talked the CIO into awarding his company the contract rather than following the request-for-proposals (RFP) process.

Inside information and a too-friendly relationship with the CIO enabled the vendor to circumvent and control the customer's procurement process, and things went downhill from there. Because there was no RFP, the project requirements were never nailed down properly. Because multiple bidders weren't heard from, no new ideas or approaches were considered, and there was no competition over price. "It was over time and over budget, and we wound up spending more in service charges each month than we thought we would," Bode recalls. "It was one of the worst projects I ever saw."

– Kathleen Melymuka

FINDING A HAPPY MEDIUM

The key is to find a balance in building a relationship with a vendor, says Tony Romero, CIO at Mitsubishi Motor Sales of America Inc. in Cypress, Calif. "We make our vendors part of the project team," he says. "We give them access to whatever they need to do the project – not access to the whole world, but access."

That means they attend project meetings, work side by side with Mitsubishi people and sometimes even have desks. But their access to the building is restricted to certain areas, and security personnel know when they come and go. Their access to systems is also limited. "They get access only to what they need to do a project," Romero explains. "They might have access to one specific server or to one specific application on a server."

Romero's IT staffers also make a distinction. "Our people are very careful about talking with vendors," he says. "They treat them as team members, but they remember they are still vendors."

Romero's approach shows that managing vendors on-site isn't rocket science, but it does require some thought, which isn't always a given. "The majority of companies don't even think about what access should be given," says Gopal K. Kapur, president of the Center for Project Management.

A good time to think about it is while negotiating the contract with the vendor, says Genzyme's director of IT client services, Mimi Moran. As you discuss in detail what vendors will do, you can also define the access they will need. Larry Graham, a vice president at Inovant, suggests asking a simple guiding question about vendor access, such as, Why do you need that?

Dave Weidenfeld, managing counsel for McDonald's, says his company sometimes goes a step further to allay suspicion that a vendor is feathering its nest. "We have a contract that effectively says while they're here, they cannot solicit new business" with us, he says.

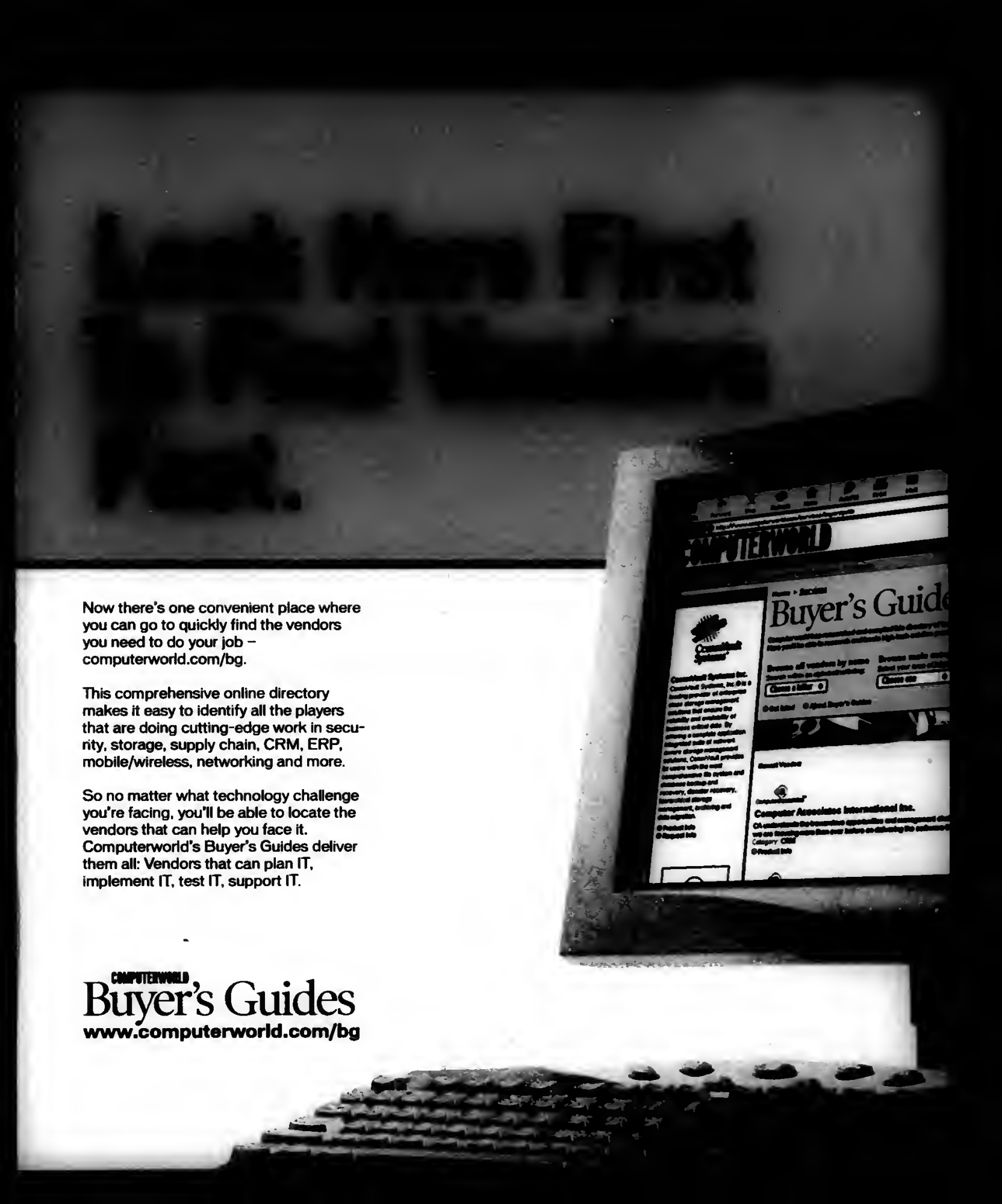
But vendor access is only half the issue. "Companies need to orient their own team members on security," Kapur says. For example, what type of meeting do you invite vendors to attend? Who gets to sit in on budget meetings in which you discuss next year's plans? Do your employees leave sensitive information on their desks or accessible on their PCs? Does your CIO know what not to talk about when meeting with a vendor exec? "A vendor may simply ask, 'What are your plans for next year?' and if someone blurts it out, it's gone," Kapur says.

Kapur also includes a security protocol item in every project charter. That makes it a point of discussion and forces the team to think about it before the project begins. "You don't get people in a plane and do security checks at 30,000 feet," he says. "You do it before you take off."

– Kathleen Melymuka

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TONY ROMERO, CIO, MITSUBISHI MOTOR SALES OF AMERICA INC.



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Finding The T in TCO

Tallying total desktop technology ownership costs requires looking well beyond users' PCs.

By Mary K. Pratt

ROCKET COMPUTERS INC recently helped a beer distributor integrate handheld computers into a customized back-office system so that salespeople on the road could log orders into servers at the main office.

As Rocket Computers' consultants put together the numbers, they tried to consider everything that would go into the client's budget. They analyzed the costs of different handheld models, monthly service fees, modems, servers, software and training — and found that the smallest details add up fast.

"When you're looking at a project driven by a $2,300 PalmPilot device . . . if we get a hundred of them, now we're looking at a quarter-million dollars. But then there's another $10,000 in cables, $5,000 in modems, then money for training and service," says Roberto Villanueva, president of Rocket Computers in Swampscott, Mass. "Then your quarter-of-a-million dollars is fast approaching a half-million dollars."

Calculating total cost of ownership (TCO) is rarely a straightforward task, regardless of the technology involved. But figuring TCO for desktops has become particularly tricky in recent years, as systems have evolved to include much more than PCs. Now IT departments must figure in costs associated with laptops, personal digital assistants (PDA), cell phones and wireless service connections.

"Just trying to determine what goes into a total cost of ownership can have you banging your head against the wall. Everybody has a different opinion about what [a desktop system] is," says Charles Russell, chief of digital archives at the U.S. Army Reserve in Fort McPherson, Ga. "You've got to look at a million different items."

Adding It Up

	LAPTOP	PDA	PHONE
ACQUISITION	$2,200	$600	$200
TCO	$12,300	$2,700	$1,300
INVESTMENT LIFE	3-4 YRS.	24 MOS.	18 MOS.
	BASE: AVERAGE OF 100 MOBILE USERS, THREE YEARS, 100 LAPTOPS	BASE: AVERAGE OF 100 MOBILE USERS, THREE YEARS, REPLACED TWICE	

SOURCE: GARTNER INC., 2002

The Reserve, Russell says, does a complete lifecycle cost analysis before rolling out new technology. That analysis covers factors ranging from the cost to deploy the technology to the salaries for the contractors who will support it. One recent analysis included about 120 categories that required a 38-page spreadsheet.

As the old saying goes, the devil is in the details. That's where companies often overlook numerous small costs, such as cables, modems and training, that can significantly add to a desktop system's TCO.

"They tend to do good with the direct costs," notes Ian Campbell, president of Nucleus Research Inc. in Wellesley, Mass. "It's when it gets more intangible that they tend to forget about it."

Campbell and some IT professionals put costs into three categories: direct, indirect and hidden. Direct costs include purchase, maintenance and upgrade costs. Indirect costs include the added burden on IT to manage the technology and the incremental costs associated with employees learning to use new tools. Hidden costs consist of things like added insurance costs and the time the accounting department needs to capitalize and depreciate the new technology.

"Most companies tend to miss those indirect costs, and the vast majority of companies miss those hidden costs," Campbell says.

Experts say the best way to start calculating TCO is to analyze your company's true needs. Workers today are requesting all sorts of technology, claiming that it can help them do their jobs. But you have to ask: Will it really help people work faster or better?

Many CIOs and chief financial officers have failed to take this initial step, according to Phillip Redman, an analyst at Stamford, Conn.-based Gartner Inc. He says there has been a disconnect between what employees want, what they need and what IT people are offering. But that's beginning to change as employees introduce their own mobile devices into the workplace as a way to synchronize e-mail, calendars and contact management.

"Most companies today are in the evaluation stage," Redman says. They realize that they need to provide the support, integration and technology necessary for these "toys" to become corporate tools.

One Piece at a Time

Redman recommends evaluating a desktop system's individual pieces — the cell phones, communicators and integrated PDAs — to calculate TCO. Look at each component separately. If you try to assess the entire system at once, there would be too many different combinations to consider accurately.

"There's no way to look at everything as a whole, as one," he says.

But Redman and other experts emphasize that the components shouldn't be viewed as stand-alone tools. Even if companies calculate the TCO for each component, they should consider, for example, how a salesperson in the field will use a handheld device, how the data will be transferred to the main network and how it can be accessed from desktop PCs.

But it's tough on IT departments that don't have control over the separate pieces of the desktop puzzle even though they're frequently called upon to support those pieces.

"Many times, the handhelds are entering the organization from the user's end; they buy it themselves and use it for accessing e-mail or company data," says Kevin Byrd, senior director of product marketing at JP Mobile Inc., a software developer in Dallas.

As a result, users with various devices are asking IT departments for support and special configurations. These demands often create all sorts of stealth costs — from staff time to new software requirements. Systems that are built up in such a scattered fashion rarely make

financial sense or have accurate costs attached to them, experts say.

"That's where you get extremely high costs of ownership for handhelds," whether they're notebooks, PalmPilots or Pocket PCs, Byrd says. IT staffs that implement central control for desktop system peripherals can save a lot.

Standardization Debate

Bill Cook, CIO at the Clovis Unified School District in Clovis, Calif., oversees a network of 10,000 computers, including 3,000 to 4,000 student-owned computers, and a $2 million annual IT budget. Laptops are already part of the district's desktop system, and Cook is analyzing the benefits of handhelds in providing anytime access to student information.

The first step to reducing costs, Cook says, is standardizing hardware. "Together, they are a nightmare in terms of support costs. It really does make a difference to get one-stop shopping," he says. The district uses IBM hardware.

Support costs are higher and compatibility issues are more time-consuming with hodgepodge systems, says Cook.

"With a hardware and vendor standard, you have less finger-pointing and more action," he says.

Many companies buy desktop PCs from a single vendor, analysts say, so it makes sense to follow this practice for mobile devices as well.

However, Campbell says, companies shouldn't always standardize. BlackBerry devices work well for sales reps who need e-mail, he says, but they won't work as well for maintenance workers who need access to manufacturing systems. Those workers would be better served by Palm OS-based devices.

In short, says Byrd, companies should aim for a centralized system that gives the IT department control and is flexible enough to accommodate different devices and expansion into other applications.

Other factors to consider include how many workers need mobile devices, how much training they need and how data will be backed up — all of which translate into dollar amounts.

Some industry analysts put the TCO of a PDA, including the cost of providing support, network connectivity, replacement units, training and software, at $2,500 to $4,400 per year. They peg the TCO for a desktop PC, including everything from hardware to downtime, at $11,000 to $12,000. Some say companies can add those numbers to calculate the per-user cost for workers who use both technologies, a practice called "business provisioning."



"You just add that on per user, per year. That's why we calculate TCOs individually," Redman says.

However, he and other experts point out that there will be overlaps, such as a shared server, that can affect the final numbers.

"When the PC was introduced, it really was an individualized tool. Now the PC is part of a much larger information system; that's why breaking out the total cost of ownership for a desktop system is a tricky proposition. It's only one element of the system," says Anik Ganguly, executive vice president of products at Open Text Corp., a Waterloo, Ontario-based supplier of collaboration and knowledge management software.

COUNTING COSTS

Security measures that don't apply to PCs should be included as extra costs in calculating the TCO of desktop systems.

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Analysts say any calculation of a desktop system's TCO should include capital costs, such as hardware, software, configuration and training. It should also take into account operational and administration costs, such as the additional accounting associated with paying monthly fees for mobile services. Finally, it should incorporate end-user expenses, including the cost of diminished productivity caused by workers fiddling with their high-tech devices.

The numbers used to calculate TCO go beyond the obvious. The work that Rocket Computers did for the beer distributor is a good example: In addition to accounting for the company's direct costs for new Symbol Technologies Inc. handhelds and the supporting infrastructure — a communications server, modems and wiring — Villanueva analyzed whether a handheld that needed to be plugged into a cell phone was cheaper than the wireless Symbol model.

After crunching the numbers, the company decided to go with 25 handhelds that needed to be plugged into phones. If the distributor had chosen the wireless model, it would have had to pay $12,500 more for the handhelds upfront, plus hundreds, maybe even thousands, of dollars a month for transmissions via Cellular Data Packet Transmission networks — a variable cost that Villanueva says had the potential to be a "runaway train."

In the end, companies will find that TCO is the sum of fixed, variable and semivariable costs.

"A solution is all about looking at hardware, software and services," Redman says, "and how they connect together so they succeed."

Pratt is a freelance writer in the Boston area.

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TCO Without Icing

TRENDS Although TCO dominates discussions when companies plan to roll out new technology, analysts say that executives also need to consider return on investment. Looking only at today's costs of desktop systems could cheat companies out of future savings.

Striking a balance between immediate costs and long-term savings isn't easy. That's due in part to the nature of ROI, which includes gains that can be hard to quantify, such as increased productivity and less downtime.

But there are some trends to think about when weighing TCO and ROI.

Bottom-line numbers are crucial for a company to see, particularly now, says Richard Clendon, director of systems management at IBM's PC division. "Productivity gains are just a tiebreaker. If you can't significantly show cost reduction, productivity improvements won't get a company to roll out [new technology]," he says, especially if the technology isn't mission-critical.

On the other hand, some companies can easily quantify ROI based on productivity gains.

Kevin Byrd, senior director of product marketing at JP Mobile, cites one company that deployed handhelds for 100 salespeople and saw an average 15% revenue increase for each sales representative. (The company won't disclose the cost of the rollout.)

Charles Russell, the U.S. Army Reserve's chief of digital archives, has even more impressive figures to show for the Army Knowledge Online portal. An investment that cost about $100 million, the year-old portal has allowed better integration of office PCs, home computers and laptops.

The savings that resulted from a decrease in downtime, a reduction in equipment purchases and improvements in productivity have been staggering, Russell says. Preliminary numbers show the Reserve saving about $20 million over two years. That kind of figure, Russell notes, is hard to ignore when looking at TCO.

– *Mary K. Pratt*

COUNTING COSTS

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NEWSMAKER

John Hagel III



In an interview with *Computerworld*'s Thomas Hoffman, the consultant and coauthor of *Out of the Box: Strategies for Achieving Profits Today & Growth Tomorrow Through Web Services* (Harvard Business School Press, Oct. 2002) offers tips to IT managers experimenting with the nascent set of technologies and standards.

What are some of the misconceptions about Web services? In truth, much of what's being done today is connecting mundane legacy applications with each other. It's not that exciting; it's basic plumbing activity. The real business value in the near term is around connecting existing applications. A second [assumption] is that the initial integration will occur within the firewall. But the early work being done is at the edge of the enterprise, such as connecting procurement and sales processes with other activities.

Who are the early adopters? I'm seeing two parallel paths. One is within the IT department, where there are early adoption efforts to see how it works and how it can help integrate systems. The other is coming from the business side, where executives are faced with having to reduce capital budgets by 25% to 30% and they're looking at Web services as one way of doing that. To date, there's been more focus by business than by IT.

What is the potential impact of business-driven Web services on CIOs and IT managers? CIOs have become very risk-averse, in part because of a backlash that returns on technology investments weren't there over the past five to 10 years. Also, CIOs are facing shortening tenures. They tend to get fired with alarming frequency because [IT projects] tend to blow up. The best way to not have things blow up is to not put new things into the mix. There's a challenge for CIOs to move to being focused on how technology can help these major business initiatives. ▶

BART PERKINS

A Squeezed Supplier Never Forgets

ANYONE CAN CUT SUPPLIER COSTS in a buyer's market. Hard negotiations that include pressuring for significant price concessions are expected. Many hungry suppliers will give in to your demands for lower prices, figuring that some work is better than none. But you should avoid unethical methods that leave your suppliers angry and waiting for revenge.



Things have already turned ugly. IT contractors on a job in Boston were told they had to work overtime but couldn't put the extra hours on their timecards. Several contractors refused to comply and recorded all of their hours. They found their contracts terminated one week later, and the remaining contractors got the message.

The owner of a small Atlanta-based accounting firm signed a contract to perform some work for a Fortune 500 company. Two weeks later, she got a letter stating that her hourly fee had been reduced by 10%. Furthermore, the hiring company would be deducting an additional 5% if it paid her bill within 15 days from the date it claimed to have received the bill. When she called the company to complain, she was told that all of its professional services firms were "voluntarily" reducing their fees, and she could take it or leave it.

In both cases, the rules were changed unilaterally, after the contracts were signed. The suppliers continue to work on these jobs, but they feel . . . well, propriety prevents reprinting their actual words here, so "cheated" will have to suffice.

The buyers could likely have gotten concessions from these suppliers by applying less extreme measures. At the very least, they could have chosen to exercise the standard "30 days' prior notice" clause in their contracts and renegotiated rates without creating an adversarial situation.

Alternatively, the buyers could have included their suppliers in the search for a solution to cost pressures. Allowing the supplier the opportunity to recommend how to reduce costs may result in a creative solution, and it could foster cooperation instead of hard feelings. Suppliers' suggestions may include the following:

- **Decreasing service levels.** Loosening guaranteed response times for noncritical areas might be a fair trade-off for lower fees.
- **Extending contracts.** Lengthening the contract reduces the supplier's sales costs and allows better workload management.
- **Using commodity products.** Generic hardware or software could be substituted for proprietary technology.

A supplier's suggestions may be unacceptable. But imposing Draconian measures without discussion will certainly rankle the supplier. These seeds of resentment often result in negative payback that could have been completely avoided. And as we all know, payback is a nasty thing.

Suppliers seeking revenge don't necessarily need to wait for the economy to rebound. A supplier that's unhappy about enforced price concessions will take the first opportunity to make up the difference somewhere else, and you may find the savings you previously beat out of your supplier dwindling away. Suppliers can hammer you on change-order fees, increase their service charges or drop their service levels. Even worse, they can move key players around and assign the B team to your account.

Adversarial business relationships aren't fun or productive for either side. Disgruntled suppliers will leave you high and dry the moment they find a better customer. Meanwhile, outside the bounds of the contract, you can kiss any kind of goodwill goodbye. And worst of all, if you squeeze a small supplier hard enough, you might inadvertently drive it out of business, a scenario usually not in your best interests.

Beware of unbound greed in your end-of-year negotiations. If your only purchasing skill is gouging your supplier, you may win in today's economy, but you will lose in the long run. When the economy rebounds, suppliers will remember the customers who treated them fairly and those who employed unethical tactics. Companies that showed integrity in hard times will get much better supplier cooperation in the future. Good supplier management creates working relationships that produce winning results, regardless of the state of the economy. ▶

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A Squeezed Supplier Never Forgets

ANYONE CAN CUT SUPPLIER COSTS in a buyer's market. Hard negotiations that include pressuring for significant price concessions are expected. Many hungry suppliers will give in to your demands for lower prices, figuring that some work is better than none. But you should avoid unethical methods that leave your suppliers angry and waiting for revenge.



Things have already turned ugly. IT contractors on a job in Boston were told they had to work overtime but couldn't put the extra hours on their timecards. Several contractors refused to comply and recorded all of their hours. They found their contracts terminated one week later, and the remaining contractors got the message.

The owner of a small Atlanta-based accounting firm signed a contract to perform some work for a Fortune 500 company. Two weeks later, she got a letter stating that her hourly fee had been reduced by 10%. Furthermore, the hiring company would be deducting an additional 5% if it paid her bill within 15 days from the date it claimed to have received the bill. When she called the company to complain, she was told that all of its professional services firms were "voluntarily" reducing their fees, and she could take it or leave it.

In both cases, the rules were changed unilaterally, after the contracts were signed. The suppliers continue to work on these jobs, but they feel ... well, propriety prevents reprinting their actual words here, so "cheated" will have to suffice.

The buyers could likely have gotten concessions from these suppliers by applying less extreme measures. At the very least, they could have chosen to exercise the standard "30 days' prior notice" clause in their contracts and renegotiated rates without creating an adversarial situation.

Alternatively, the buyers could have included their suppliers in the search for a solution to cost pressures. Allowing the supplier the opportunity to recommend how to reduce costs may result in a creative solution, and it could foster cooperation instead of hard feelings. Suppliers' suggestions may include the following:

- **Decreasing service levels.** Loosening guaranteed response times for noncritical areas might be a fair trade-off for lower fees.
- **Extending contracts.** Lengthening the contract reduces the supplier's sales costs and allows better workload management.
- **Using commodity products.** Generic hardware or software could be substituted for proprietary technology.

A supplier's suggestions may be unacceptable. But imposing Draconian measures without discussion will certainly rankle the supplier. These seeds of resentment often result in negative payback that could have been completely avoided. And as we all know, payback is a nasty thing.

Suppliers seeking revenge don't necessarily need to wait for the economy to rebound. A supplier that's unhappy about enforced price concessions will take the first opportunity to make up the difference somewhere else, and you may find the savings you previously beat out of your supplier dwindling away. Suppliers can hammer you on change-order fees, increase their service charges or drop their service levels. Even worse, they can move key players around and assign the B team to your account.

Adversarial business relationships aren't fun or productive for either side. Disgruntled suppliers will leave you high and dry the moment they find a better customer. Meanwhile, outside the bounds of the contract, you can kiss any kind of goodwill goodbye. And worst of all, if you squeeze a small supplier hard enough, you might inadvertently drive it out of business, a scenario usually not in your best interests.

Beware of unbound greed in your end-of-year negotiatinns. If your only purchasing skill is gouging your supplier, you may win in today's economy, but you will lose in the long run. When the economy rebounds, suppliers will remember the customers who treated them fairly and those who employed unethical tactics. Companies that showed integrity in hard times will get much better supplier cooperation in the future. Good supplier management creates working relationships that produce winning results, regardless of the state of the economy. ◗

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SYSTEMS ANALYST IV-For co. specializing in mktg & mntg of computer software; responsible for researching changes & enhancements to existing features, product install processes, tools, standards & processes. This includes testing and verifying systems & database modules to ensure their quality & integrity. Train employees & customers on systems usage. Participate in process refinement & improvement. Coordinate activities of various depts to ensure completion of the project on schedule. Req's: B.S. or equiv based on education and/or work experience, with concentration in Comp Sci, Business or a related field; 5 years exp in job offered or 5 years technical exp in supporting PC's, mainframe or web based environments. Proficiency in Java, SQL Server, Microsoft Visual J++, Microsoft Visual Studio, Select Enterprise, Rational Clear Quest, Rational Clear Case, Microsoft Visio PVCS Defect Tracker & Test Director. 40 hrs/wk. Send resume to Siemens Medical Solutions, Human Resources, 51 Valley Stream Pkwy., Malvern, PA 19355. FAX 610-219-8265, e-mail human.resources@smed.com EOE/AA.

Programmer 8a-5p, 40 hrs/wk. Convert data from project specs, prep detailed workflow chart for input, output & logical operations, dsgn, implmt & test comp prgm using C, Java2, microprocessor prgmg, networks & UNIX, prep tech'l documentation. Educational req: Bach or equiv in Comp Sci or Engg, Info Systms, Electrncs, Electronics or related field of Engg. 1 yr exp in job offd or as S/ware Engr/Systms/Prgmr Analyst. Resume Nextgen Infotech, Inc. 2090 Beaver Ruin Rd., Ste 600, Norcross GA 30071

Seeking qualified applicants for the following positions in Memphis, TN. Senior Systems Planning Analyst: Serve as a project/team leader. Evaluate systems requirements and develop system configurations to ensure corporate objectives are met. Plan, design, analyze, develop and implement computer systems. Requirements: Bachelor's degree* in computer science, MIS, engineering, applied science or related field plus 5 years of experience in computer systems development. Experience with Visual Basic, SQL Server MVS/TSO mainframe development/interfacing with server applications also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to: Chris Gibney, Federal Express Corporation, 2600 Nonconnah, Suite 191, Memphis, TN 38132. EOE M/F/D/V

S/W ENGR
Anlyz, dsgn, dev code, test & implement commercial appls utilizing knowledge of sys. dev life cycle. Dev. dsgns based on specs. Anlyz, eval & modify existing or proposed sys. Coord w/users to ensure efficient & timely delivery of sys. BS in Comp. Sci., Engrg., Bus or Math plus 3 yrs exp. in either the position offered or as Prog. Analyst, Sys. Analyst or S/W Cons. rqd. Must have exp. w/Windows & JMVS/ESA 5.2.2 operating sys., COBOL & MVS/JCL lang., & Oracle, DB2 & SQL Server RDBMS. High mobility preferred. 40 hrs/wk, 8 am – 5 pm, $60,980/yr. Qualified applicants report/submit resume to: Manager, Westmoreland County CareerLink, 300 East Hills St., Youngwood, PA 15697. 1606. Refer to Job Order WEB 264936

Sr. Software Engineer
Design and development of reports, functional specifications, and high level design utilizing BRIO. Must have Bachelors Degree Computer Science or Electronics or in a related field & 3 yrs. exp. or Sys. exp in a related position w/ability to use: Brio Administrator, Brio Query Designer Brio SQR Report Builder, Brio One Integrator DB2, J2EE, DB2, SQL Server and Cold Fusion. Must be willing to travel and relocate.
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$76,000/Yr.
Applicants send cover letter and resume to:
Cyber Korp, Inc.
400 West Lake Street
Suite 216
Roselle IL 60172-3572
Attn. HR MGR

NuTech Solutions, Inc., an international software development consulting company, has openings for Senior Software Developers. The qualified candidate will be responsible for development of software products and business solutions for data acquisition, data mining, optimization and knowledge management, using computational intelligence knowledge of evolutionary algorithm, etc. Will utilize software expertise in system integration, object oriented design and development and data modeling. Other technologies that are key to this position are: Java, C++, Microsoft VisualStudio and Oracle. Minimum requirements are a Masters Degree in Computer Science and four (4) years in design and development. Please submit your resume to NuTech Solutions, Inc. Attn: V White, 8401 University Executive Park, Charlotte, NC 28262

Computer Support Spec., Smyrna, GA. Provide technical support, maintain commercial credit card information system, coordinate conversion to new hardware and software. Req'd: BS (or equiv. in education and/or exp.) in Comp. Science or related field. Resumes to: Yama Enterprises, 2086-B. Cobb Pkwy. Smyrna, GA 30080.

DATABASE ADMINISTRATOR
Bachelor's degree or foreign degree equivalent in Computer Science, Computer Engineering, or a closely related field required. Must hold three years experience in database administration using Oracle and Oracle DRUMS in programming. Work hours: 8 am to 5 pm, M-F. Send resume to Leslie-America's Collectible Network, Inc., 10001 Kingston Pike, Suite 57, Knoxville, TN 37922, Attn: Job Code DAB

Test Validation Engineer. Develop & implement software for Automated Test & Measurement systems to test design validation for Automobile Steering Columns & related components using LabVIEW & VB for programmable controllers, PC or embedded controllers. Design electrical control systems for Test & Measurement applications. Run component validation tests & prepare test result reports. Req'd: B.S.M.E. & 5 yrs exp. 40 hrs/week, 9am-5pm. Send resume to J. Brigham, HR #A28, Onsite Companies, Inc., 7301 Parkway Drive, Hanover MD 21076.

Computer/ Info Systems
INFORMATION SYSTEMS PROFESSIONALS
To participate in analysis, problem solving, project design, technical implementation for major projects and mentor junior level consultants. Participate in the timely and high quality delivery of product; implementation, integration, design, coding, testing and documentation of custom application software; evaluate user requirements and consult with design team to identify current procedures and needs; support and train end-users. Technologies/Platforms used include, UNIX, Windows NT, SQL Server, or Oracle using SQL, C/C++, Visual Basic, Java, Cobol and other appropriate programming languages in Client /Server, Network and Mainframe environments. Must have a Bachelors degree or its equivalent, and 2+ yrs. professional experience. Send resume to: Human Resources, Knightsbridge Solutions, 500 W. Madison Ave., Suite 3100, Chicago, IL 60661 EOE.

Sys/Analysts to perform embedded systems prog using VC++, COM, DCOM, CORBA, WAP, Code Warrior, Assembly language, Linux etc for hand held PCs and PDAs, develop database appls using Oracle, MS SQL, on Window/UNIX OS; test and debug appls for optimal performance. Require BS or foreign equiv in CS or Engg (any branch) with 1 yr exp in IT. High Salary. Pl. Travel involved. Resumes to Salem Associates, Inc. 405, 6th Ave. Ste 102, Des Moines, IA 50309

Senior Programmer Analyst needed to research, design, and develop computer software systems, applying principles and techniques of computer science, engineering, science and mathematical analyses, using the following hardware/software: IBM 3090, COBOL, IMS (DB/DC) JCL and others. 40 hrs/wk: 8am to 5pm. $57,450/year. Requires Bachelor's Degree in Computer Science or Engineering and 1 year of experience in the job offered or as Programmer/Programmer Analyst. Employer Paid Ad. Send resume to P.O. Box 11170, Detroit, MI 48202-1170. Reference No. 202495.

Financial Database Analyst w/MS in Information Systems. Will apply knowledge of database management systems & perform full life cycle system implementation & deployment. Send resume to: HR Dept., Metro Bank, 9600 Bellaire Blvd., Suite 252, Houston, TX 77036

Senior Software Engineer with client-server and web based applications design and development experience to work out of our Dublin, Ohio office. Send resume to Plante & Moran LLP, Att: HR Mgr, SSE-KT, 3434 Granite Circle, Toledo, OH 43617-1160 or on-line to pamela.schell@plantemoran.com. EOE.

Black Belt - GEEP IT
Atlanta, GA

Who we are

GE Power Systems is the world's leading supplier of power systems equipment and services with global annual sales of over $14 billion. Our innovative team spirit and progressive challenges have made GE Power Systems an environment offering exceptional opportunities.

Who we seek

The Black Belt will lead the implementation of medium to large sized IT projects including the creation of a data warehouse for Parts business to streamline business reporting, on-time and under budget to meet customer requirements and milestones, work with functional and technical teams to select vendors for implementing a robust reporting environment for Parts and implement solutions; collaborate with GE Energy Services and Power Systems Shared Services to leverage their Centers of Excellence to help execute different phases of the application development life cycle for the data warehouse project, partner with the business quality resources to build quality capable processes for business reporting and for selecting, managing & distributing Parts-IT contract resources using quality improvement tools; and integrate quality programs to create a seamless interface to the customer by facilitating optimum system / application performance, identifying and utilizing any all digitization opportunities and implementing business intelligence solutions.

The Black Belt will possess a BS in Information Systems, Computer Science, Engineering or equivalent plus a minimum of 2 years experience implementing IT projects. The Black Belt will demonstrate the ability to manage multiple projects using quality improvement tools; strong situational leadership, and project risk mitigating skills. Strong interpersonal, presentation, communication, organization and quantitative/analytical skills are required

How to apply

We offer a competitive salary, an outstanding benefits package and the professional advantages of an environment that supports your development and recognizes your achievements. To apply, please send your resume, referencing code GEPS_200863/AN090, to opportunities@gecareers.com. We are an Equal Opportunity Employer

GE Power Systems

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Senior Project Manager-Responsible for running projects of three to five team members. Projects must be completed on time, on budget and to quality standards. Duties include setting and managing goals and priorities with little or no guidance. Make professional level presentations to clients and staff. Manage contracts effectively and perform risk assessment. Assist sales and marketing personnel with estimates of project work and costs. Evaluate business requirement decisions. Develop accurate, viable project plans. Evaluate performance and write and conduct project reviews for team members. Requirements include a Master's degree or equivalent in Computer Science, Electrical Engineering or a related field, or the equivalent Bachelor's degree or equivalent and five years of progressively responsible experience in the job offered or in project management and/or software development. Applicants must have unrestricted authorization to work in the United States. Salary: $90,000/year. 40 hours/wk. Respond with two copies of resume to Case #200112957, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114

IT BUSINESS ANALYST III
ADT Security Services, Inc. has an immediate opening in its Boca Raton, Florida office for an IT Business Analyst III.
Responsible for gathering and understanding business needs and for developing technical specifications to be used by development staff to address these needs.
Must possess at least a bachelor's degree or as equivalent in Computer Science, Engineering or a related field, experience as a Management Consultant/Project Manager/Lead, and experience with decision support systems, multi-tier computer systems and /or multi-system strategies, business processes and strategies. Oracle, SQL-Server, Sybase, Informatica, Business Objects, UNIX and Windows NT
Resume and/or cover letter must reflect each requirement above and specify reference code ITBA/RJ or it will be rejected.
Forward resume to: Theresa Maia, ADT, One Town Center Road, Boca Raton, FL 33486-1010.

NuTech Solutions, Inc., an international software development consulting company, has an opening for the position of Vice President of Products. The qualified candidate will lead the design, development and implementation of mission critical software tools and application products that apply computational intelligence principles (evolutionary algorithms, simulated annealing, neural networks, fuzzy logic and hybrid systems) to business process optimization. Will maintain full functional responsibility for the activities of team including selection and hiring of programming staff, staff supervision and guidance development of project specific goals and milestones, implementation of quality standards and procedures. Will represent the company at trade and academic conferences. Minimum requirements are a Masters Degree in Computer Science and four (4) years development experience designing systems that apply computational intelligence principles to the optimization of business problems. Must be fluent in state-of-the-art computational intelligence areas and technologies. Please submit your resume to NuTech Solutions, Inc., Attn: V White, 8401 University Executive Park, Charlotte, NC 28262.

Network Administrator: Install, configure & support company's local area network (LAN), wide area network (WAN) & internet system. Maintain network hardware/ software. Monitor/ Maintain network. Supervise network support & client server specialists. Plan, coordinate & implement network security measures. Req: Master's Deg. in info systems + 1 yr. exp. in job off. Resume to: Merchant Investment, 1120 Powers Ferry Rd. Marietta, GA 30067

Several computer related positions available for international airline telecom and information services company. Degree, technical skills & experience vary per position. Send resume to: Natasha Lyttle, SITA INC, 3100 Cumberland Blvd., Ste 200, Atlanta, GA 30339. SITA INC is an Equal Opportunity Employer

Programmer Analyst: Various locations in GA. Analyze, design, develop, re-engineer, and implement commercial software applications. Req'd: BS in Comp. Science, Engineering, or related field, and 2 yrs in job offered, or 2 yrs as a Software Consultant. Resumes to: Magnum Systems, 375 Centre Ave, Ste 86, Riverside, CA 92507

iDial Networks, Inc. a Telecommunication Services company based in The Woodlands, TX requires:

Vice President for
Retail Sales & Marketing:

To develop sales strategies to market virtual phone cards and virtual phone accounts nationwide as well as overseas. Implement Agent Program and establish distribution channels. Manage sales team. Negotiate rates with international carriers from Europe and Asia. Needs a Masters degree in Economics or relevant field and 4 years relevant experience in managing and marketing pc based telecommunication systems.

Senior Manager Control Center
& Wall Operations:

To be responsible for all e-commerce operations and to manage and develop the main switching systems for web based call triggering telephony projects based on Dialogic and Windows 2000 platforms and Cisco networking. Knowledge of Dialogic platforms based on E1 Signaling methodology used in South East Asia and Cisco networking is essential. Needs a Bachelors in Electrical & Electronics Engineering and 5 years relevant experience in pc based switching systems.

Database Administrator II Perform maintenance & backup functions for Oracle d'base. Resolve issues of moderate scope by reviewing & analyzing identifiable factors. Refer more complex issues to server staff. Collaborate w/end users by conducting needs analyses. Dvlp & implmt d'base dsgn & modeling. Conduct testing of systms to ensure efficiency & accuracy. May manage security access & control to specific d'base ensuring only authorized staff has access & updating capabilities. Collaborate w/end users in dsgng & generating reports & serving as tech'l expert. Ensure data reported a user-friendly & understandable. Dvlp & update documents pertaining to systm or s/ware procedures, reqmts, & changes. B.S. in Comp. Sci or related field +2 yrs exp in job and or related occupation such as S/ware Engr or similar duties under different job title. 2 yrs exp w/Oracle d'base admin, RMAN, Unix Shell Scripting, Hamming Bird Exceed, IBM AIX (RS 6000 series), & MS NT 4.0. Oracle Certified Prof'l certification reqd. 40 hrs/wk, $66K/yr. Must have proof of legal auth to work in US. Send your resume to IA Workforce Center, 215 Watson Powell Jr. Way, Ste 100, Des Moines, IA 50309-1727. Please ref to JO #1101637. Employer paid ad.

Smithfield Foods, Inc. has an opening for a Distribution Systems Analyst. The qualified candidate will ensure proper configuration and operation of all computer related equipment used in the warehouse, coordinate system upgrades and maintenance with warehouse operations, will analyze requirements and design, develop and maintain interfaces, maintain servers and systems reports, and support existing systems. Responsibilities will also encompass development and implementation of new and existing applications and data conversion processes. Minimum requirements are a Bachelors Degree in Computer Science and 2 years of experience in systems analysis, program design and development, applications implementation and support or 4 years of professional experience in systems analysis, program design and development, applications implementation and support. Submit resume to Smithfield Packing, Inc., Attn: Human Resources, 200 Commerce Street, Smithfield, VA 23430.

Sr Database Developer - Design /implement databases as SQL Server 2000. Knowledge of object oriented database design a must. Write Transact-SQL & DTS scripts to Port database objects. Write triggers/ stored proc. in Transact-SQL. Understand b/z process / translate req. to SQL interactions with database. Understand LDAP database structure & write queries to transform it to a normalized database structure. Write WSH scripts to import IIS logs to Webtrends, knowledge of Webtrends Database Structure. Must have worked on SQL 2000 SQL-XML functionality. Familiar with Full Text Searching/ MS Indexing Service; develop in-house applications (ASP, COM, Javascript) for user interfaces conversant with Rational Rose Data Model. Experience on Rational Unified Process a must. BS in Comp. Sci. + 3 yrs. exp. (Software Dev. & SQL Server Database Design & Admin.) + Microsoft Certificate in SQL Server. Apply to Firstdoor 1425 Ellsworth Industrial Drive, # 31, Atlanta, GA 30318 with proof of work authorization.

ALGORITHMS ENGINEER- Millimetrix Broadband Networks, a leading provider of broadband wireless technology, seeks qualified applicants for the position of Algorithms Engineer. Will perform specialized research for new millimeter wave products (18 to 38 GHz), including theoretical modeling and simulations for High Gain Channel Coding, Cross Polar Interference Cancellation, Synchronization and Phase Locked Loops. Will provide technical support for existing products and product upgrades. Requires MS in Elect.Eng. and 4+ years experience in research and development for broadband applications (physical layer). Should have expertise in Linux-C++ and Matlab. Send resume, referencing job code 7-02, to: Millimetrix attn: Director of HR, 2325 Dulles Corner Blvd. #470, Herndon, VA 20171; fax: (703) 871-7302; or e-mail: hr_us@millimetrix.com. EOE.

Programmer Analyst wanted to research, design and develop computer software systems, applying principles and techniques of computer science, engineering, science, and mathematical analyses, using the following operating systems: MS-DOS, Windows, UNIX, and the following computer languages: COBOL, DB2, IMS, CICS. Modify system to address any concerns by client and document and test system. 40 hrs./week. 8am to 5pm. $ 59,446 /year. Must possess Bachelor's Degree in Engineering or Computer Science and six months of training in multi-user programming. Employer Paid Ad. Please send resumes to MCDC /ESA, P.O. Box 11170, Detroit, MI 48202-1170. Reference No. 202226

Western Union, a Division of First Data Corporation, a co. in Greenwood Village, CO specializing in e-commerce transaction payment services, has an opening for a Sr Application Architect to work in Montvale, NJ & other unanticipated job sites in the U.S. Analyze complex internal business functions and processes to design, develop code and implement financial software applications. Requires bachelors degree in computer science; 2 yrs. exp. as a project manager or leader; working knowledge of TANDEM K and S Series hardware and Guardian 90 operating system. Respond by resume to Norm Barnett, First Data Corporation, 6200 S. Quebec St., Greenwood Village, CO 80111 and refer to job #33888NA.

SOFTWARE CONSULTANT
Analyze & evaluate existing or proposed software systems. Dsgn, dvlp, implmt & improve programs, systems & related procedures to process data using in-depth knowledge of the software dvlpmnt life cycle & C/C++ programming languages. Encode, test, debug & install operating programs & other system software utilizing exp. with Ingres & SQL server. Bachelor's (or equiv.) in Comp. Sci., Math, Bus. or Engrng + 2 yrs exp in position offered or as a Programmer Analyst, Software Engineer or Systems Analyst reqd. Exp. must include: (a) C or C++ programming languages; and (b) Ingres or SQL server. High mobility preferred. 40 hrs/wk, OT as reqd. 8 am - 5 pm, $61,000/yr. Qualified applicants please submit resume to Manager, Washington County Team, PA CareerLink, Millcraft Center, Suite 150LL, 90 West Chestnut Street, Washington, PA 15301-4517. Please refer to Job Order No. WEB 279724

SOFTWARE CONSULTANT
Analyze & evaluate existing or proposed software systems. Dsgn, dvlp, implmt & improve programs, systems & related procedures to process data using in-depth knowledge of the software dvlpmnt life cycle. Encodes, tests, debugs & installs operating programs & other system software utilizing IBM operating systems, CICS/COBOL languages & DB2. Bachelor's (or equiv.) in Comp. Sci., Math, Bus., Engrng or Comp. Info. Sys. + 2 yrs. exp. in position offered or as a Programmer Analyst, Software Engineer or Systems Analyst reqd. Exp. must include (a) IBM operating sys., (b) CICS & COBOL languages, and (c) DB2 database. High mobility preferred. 40 hrs /wk, OT as reqd, 8 am - 5 pm, $61,000/yr. Qualified applicants please submit resume to Manager, Washington County Team PA CareerLink, Millcraft Center, Suite 150LL, 90 West Chestnut Street, Washington, PA 15301-4517. Please refer to Job Order No. WEB280334

Software Engineer - Orefield, PA. Require experience in design and development of applications using Vision/Plus, COGEN, COBOL, CICS, VSAM and JCL. Relocation within USA possible. Attractive compensation package. Send resume to Mahalingam N Narayanan, Gurus IT Services, 1117 Linden Hollow Lane, Orefield, PA 18069. Email resume to resume@gurusit.com.

Java Programmer
Design, development, & testing of GUI screens, using Java, Mysql, JDBC. Raise & resolve issues by working w/team members. M.S. in CS or rel w/skill to use Java, Mysql, JDBC, PL/SQL, VBScript, HTML, JSP, CGI, UNIX, Informix, Oracle 40.0 hrs/wk, 9-5. Send resume to Mr. Ray Little, Vice President, MediSYS, 7201 Halcyon Summit Dr. Montgomery, AL 36117

Senior Analyst needed w/exp to: analyze,design,develop, test & support software applications using Clarify, Oracle, Tuxedo, Visual Basic, Windows, AS/400, RPG/400, CL/400; Actuate & Impromptu. Implement software applications on Windows operations systems & AS/400 operating systems. Send resumes to: informationtechnology@ionica.com

Software Design Engineer, Cary, NC. Perform s/ware requirements analysis, review, design, implementation & testing for electronic laboratory test equipment. Develop instrument monitoring & control s/ware on Windows NT using Visual C++, MFC, COM, DCOM, ATL, OLE-DB, ODBC, SQL Server, MS Access, RS232, TCP/IP. Perform GUI & RDBMS design. Maintain firmware in Assembler, C & VHDL for Intel 8051 series. Evaluate interfaces betw. h/ware & s/ware. Assist s/ware design analysis. Manage version control of software. Req: Bachelors in Electronic Engineering/Computer Science + 5 yrs in job or as Software Engineer-Electronic Systems design. Mail resume to: HR, Varian, Inc. 13000 Weston Pkwy, Cary, NC 27513

Computer Hardware Technician sought by computer repair, upgrade and sales company in Lakewood, CO. Install, modify, and make minor repairs to computer hardware systems and peripheral units including fax machines, printers, and scanners. Provide technical assistance and training to system users. Install hardware and peripheral components on users' premises, following design and installation specifications. Enter commands and observe system functions to verify correct system operation. Requires 4 years of experience installing, modifying, and repairing computer hardware and peripheral systems such as fax machines, printers and scanners. M-F 8am-5pm $39,780/yr. Respond by resume to Employment Programs, PO Box 46547, Denver, CO 80202 and refer to JON CO 9031401

Software Eng. sought by Co. that develops comp.-based physiological systems analysis software. Must have Masters in Comp. Sci., Biomed. or Elec. Engg., Applied Math, or Num. Analysis + 1 yr. exp. in building 3D comp. models of physiological systems. Req: C++, Java, comp. control langs. Response to H.R.U.I.X. Physiome Sciences, Inc., 150 College Rd. W., Suite 300, Princeton, NJ 08540-6604. EOE

COMPUTER SYSTEMS ANALYST-oversee front-end systems design by applying knowledge of JAVA, accounting & database systems in development of applications. Implement custom user interface. Min req: 4 yrs exp. Resumes: Cactus Networks Corp., 1333 S. Miami Ave., Ste 300, Miami, FL 33130

Software Engineer Nashua, NH. Research, design & dev comp softw sys, in conjunction w/hardware prodt devpmt. Consult w/ hardware eng'rs & eng staff to evaluate interface betwn hardware & soft., & operat'l & performance req'ts of overall sys. Provide tech. guidance on client projects. Will use Win NT/95, 2000, PB, Sybase, Oracle, Visual Basic, C++, UNIX, FORTRAN, SQL Server, Visual Interdev, ASP, Java Script, IIS, MTS, Access, XML, Java. Bach's in CS, Math, Eng or MIS plus 5yrs as systems analyst/prog analyst. Will accept Mast's + 2yrs exp as a prog analyst and. Req $ 85,000 /yr, 40hrs/wk, 9:00am to 5:00pm. Pls send 2 copies of resume/letter of appl'n to: Job Order # 2002-433, PO Box 989, Concord, NH 03302-0989

Sr. Systems Analyst for b/z analysis, software development using Java, Visual Basic, Java Script, SQL, HTML, ASP, Rational Rose UML, EJB, Ant, & Clear Case on Windows. Windows NT & Sun OS. Perform system integration functions including IBM /DB2 projects. Configure Web Sphere, iPlanet & Siebel. Develop Ant Scripts for data migration / deployment. Maintain documentation and tech. assist. /support. BS in Electronics Engineering or Comp Sci + 3 yr. Exp. in Software design, development, & implement. for b/z apps. + Sun or Microsoft Certificate in Programming. Comp. Salary. Apply: Nasery, 6580 Jimmy Carter Blvd., Norcross, GA 30071 with work authzn proof

MindTree Consulting, as expanding IT consulting company offering product realization services to Internet infrastructure and device vendors, is searching for qualified IT professionals to join its growing team. Presently, we have positions for Network Administrators and Software Consultants. Experience with Cisco Router, Compaq servers, Implemented Checkpoint network security firewalls, Rational Rose, iPlanet Webserver, Sun Microsystem's J2EE architecture desired. Qualified applicants will have a bachelor's degree in a relevant field and qualifying industry experience. Positions may require relocation to various client sites throughout the United States. Qualified applicants submit resumes to HR Department, The Tower at 270 Davidson Avenue, Suite 305, Somerset, NJ 08873.

Oracle Developer/Database Administrator-IT Co. in Lawrenceville, NJ needs Database Administrator to dsgn d'base models using Designer 2000, Erwin Tools, write d'base creation scripts & perform d'base admin, maintenance & monitoring. Will also build & maintain critical feeder process for d'bases & write high level dsgn & low level dsgn documents. BS in Electronics or Comp Engg w/3yrs exp reqd. Prevailing wage, 9a-5p, M-F. Contact HR Dept at 609-912-0666 or fax resume to 609-912-0605.

PROG. ANALYST
Hexaware Technologies, Inc. is currently seeking a Programmer Analyst who holds at least a B.S. in Comp. Sci., Engrg., Business or Math & has one yr. exp. as a Prog. Analyst, S/W Engr, S/W Consultant or Sys. Analyst. Must have exp. w/Live Commerce 3.0, Gentran Server, EDI (ANSI & EDIFACT), UNIX & SQL Server. Must also hold Microsoft Visual Basic certification. Resume only to: Rajendran Ravindran, Director -HR, 4343 Commerce Ct., Ste. 615, Lisle, IL 60532

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S/W Engineers to analyze, design, develop and implement CRM, client/server, web appls using Java, Clarify suite, VB, PB, Sybase, Oracle, PL/SQL, MS Access on Windows, Unix, Sun Solaris OS, interact with users, obtain user requirements, conduct system analyses, performance tuning, test and troubleshoot project appls, train and users/team members. Require: MS or foreign equiv in CS/Engg (any branch) with 1 yr exp in IT. Competitive salary. Travel involved. Resume to: HR, ABZ Consulting, Inc. 3140 Briarcliff Road, Suite A, Atlanta, GA 30329

Cedar Enterprise Solutions, Inc., a software consulting and services organization has an opening for VP-Content Value Management Technology. The ideal candidate will be responsible for management consultancy encompassing sales and marketing, account development for the U.S. and Canada including strategic development and new alliances and product development for new IT technology. Minimum requirements are a Bachelors Degree in Marketing and 4 years experience in marketing/sales manager positions or 8 years experience in marketing/sales manager positions. Please submit your resume to: Cedar Enterprise Solutions, Inc./HR, 100 East Pratt Street, Baltimore, MD 21202.

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NET2S is a leading International Consulting and Engineering firm specializing in communications technologies. We are presently seeking to fill the following positions.

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Citrix

said, AutoNation's Corporate Licensing Program agreement no longer exists as a valid method to procure software.

Other difficulties involve Citrix's value-added-reseller model, Leitz said. When AutoNation's reseller went out of business two years ago, some of its Citrix purchase history went with it, he noted.

When AutoNation upgraded to a new version of Citrix's MetaFrame XPe product, it had to go through a three-month process of faxing 3-year-old purchase orders and agreements to Citrix "to review what we believed was purchased, vs. what Citrix had on record," Leitz said.

"Not a pretty process, to say the least," he added.

Tony Silva, a vice president of IT in the Troy, Mich., office of ABN Amro North America Inc., said it has been somewhat complicated to keep track not only of the Citrix licenses but the other software applications running on the Citrix servers as well.

Jim McGrath, a senior manager of product and technical marketing at Citrix, said the difficulties can be particularly frustrating for longtime customers that may have gone through several different licensing programs and discount structures.

Citrix has started to address the problems. The company launched an electronic licensing option in March 1999, and this August, it introduced an Easy Licensing program that lets customers buy products as they need them without a formal, written contract.

Using the Easy Licensing option, customers can consolidate multiple license contracts to a single serial number, so they don't have to manually enter their many 20-digit numbers, McGrath said.

But McGrath said it would be far better if the information from Citrix's product activation system was uploaded to its secure license site so customers can see what they have purchased, when they bought it and how much of their Subscription Advantage option is left on each of their licenses.

Adding Licenses

As of May, all new Citrix licenses had to be purchased with a one-year subscription that entitles customers to any new product updates released over that period.

Templeton said customers may be adding licenses on a monthly basis, and each time they do, they get another license number that must be added into the system for activation purposes.

"If you buy licenses every single month, all these clocks are ticking, and their alarms are going off every 12 months all over over the place," Templeton said. "It's too complicated."

Bob Kruger, chief technology officer at Citrix, said the technology will be the easy part of solving the problem. "The tough part is scoping out what you need to do and then how you get other processes within the company to interact with those changes," he said.

Kruger said he can't provide details because the system hasn't been finished, but he noted that some technology will be third-party-based and integrated by Citrix.

In the meantime, Citrix is adding license-activation improvements to a new MetaFrame update, due next year.

Alvin Park, an analyst at Gartner Inc., said many vendors are considering new tools to not only help customers track their licenses but also to keep them in compliance.

Citrix's Licensing Changes

MAY 1998 Subscription Advantage option is launched.

MARCH 1999 Electronic licensing option is added.

FEBRUARY 2001 Licensing model based on servers and concurrent users is aggregated. Licensing is now based only on concurrent user connections.

MAY 2002 One-year Subscription Advantage plan is made mandatory.

Continued from page 1

Web Services

formation from disparate applications to a portal. Although the portal would be used for a wide range of business functions, it would also help with integration, he said.

Hugh Jurkiewicz, a corporate architect technologist in the Wellesley Hills, Mass., office of Sun Life Financial Services of Canada Inc., said he can foresee Web services technology complementing his firm's integration work in situations where security and transaction needs aren't high.

Jurkiewicz said be also hopes that Web services will drive integration broker vendors to lower the high price of their software.

"For more mission-critical application integration needs, we may not wish to experiment with Web services," be said.

As has been the case for some time, IT managers continued to express concerns about the immaturity of Web services standards, particularly in the area of security.

"The security issues, I think, are going to be a big issue with our company. The standards aren't all there yet," said Tim Lienemann, a senior technical designer at Pittsburgh-based U.S. Steel Corp., whose internal development staff does much of its integration work.

Janelle Hill, an analyst at Meta Group Inc. in Stamford, Conn., said only a small percentage of IT shops are currently incorporating Web services into their integration strategies or requirements because of confusion over what Web services are and where they might be used in their application portfolios.

A 'Thin Veneer'

Hill said that during the next five years, integration vendors and IT shops will experiment by wrapping a "thin veneer" around their applications, in the form of Web Services Definition Language (WSDL) interfaces.

However, Hill predicted that it will take at least five years for companies to re-engineer their core applications to be service-oriented and gain interoperability "without a whole lot of transformation being required in the middle."

Roy Schulte, an analyst at Gartner, said very few applications will run entirely free of Web services, if for no other reason than "because every vendor in the world has built it into their products."

Schulte recommended that companies building new applications from scratch employ a service-oriented architecture and use WSDL to document the interfaces. That will make it easier to integrate those applications with existing legacy and purchased applications, because it will have "nice, defined calls," be said.



Companies can then wrap their older applications with WSDL interfaces and write the code needed to transform the data. Or they can purchase an integration broker from specialized vendors such as Tibco Software Inc., webMethods Inc., SeeBeyond Technology Corp., Mercator Software Inc. and Vitria Technology Inc., or from large vendors such as IBM and Microsoft Corp.

Schulte said that only a small percentage of IT shops now use integration brokers, but he predicted that more will use them as Web services help drive down the high cost of the adapters that are needed to make connections between different applications.

"If you put in Web services and you cut the cost of the adapters in half, then you've cut the entire project cost by a quarter, and suddenly projects that you couldn't cost-justify before, you can now cost-justify," be said.

But it may take some time for the impact to trickle down to IT shops. One IT manager at a large retail chain, who requested anonymity, said be isn't interested in the Web services strategies of integration brokers "because it's still in the big-hype cycle."

"With Web services, it's going to be a long buy-in phase," he said.

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Continued from page 1

Citrix

said, AutoNation's Corporate Licensing Program agreement no longer exists as a valid method to procure software.

Other difficulties involve Citrix's value-added-reseller model, Leitz said. When AutoNation's reseller went out of business two years ago, some of its Citrix purchase history went with it, he noted.

When AutoNation upgraded to a new version of Citrix's MetaFrame XPe product, it had to go through a three-month process of faxing 3-year-old purchase orders and agreements to Citrix "to review what we believed was purchased, vs. what Citrix had on record," Leitz said.

"Not a pretty process, to say the least," he added.

Tooy Silva, a vice president of IT in the Troy, Mich., office of ABN Amro North America Inc., said it has been somewhat complicated to keep track not only of the Citrix licenses but the other software applications running on the Citrix servers as well.

Jim McGrath, a senior manager of product and technical marketing at Citrix, said the difficulties can be particularly frustrating for longtime customers that may have gone through several different licensing programs and discount structures.

Citrix has started to address the problems. The company launched an electrooic licensing option in March 1999, and this August, it introduced an Easy Licensing program that lets customers buy products as they need them without a formal, written contract.

Using the Easy Licensing option, customers can consolidate multiple license contracts to a single serial number, so they don't have to manually enter their many 20-digit numbers, McGrath said.

But McGrath said it would be far better if the information from Citrix's product activation system was uploaded to its secure license site so customers can see what they have purchased, wheo they bought it and how much of their Subscription Advantage option is left on each of their licenses

Adding Licenses

As of May, all new Citrix licenses had to be purchased with a one-year subscription that eotitles customers to any new product updates released over that period.

Templeton said customers may be adding licenses on a monthly basis, and each time they do, they get another license number that must be added ioto the system for activation purposes.

"If you buy licenses every single month, all these clocks are ticking, and their alarms are going off every 12 months all over over the place," Templeton said. "It's too complicated."

Bob Kruger, chief technology officer at Citrix, said the technology will be the easy part of solving the problem. "The tough part is scoping out what you need to do and then how you get other processes within the company to interact with those changes," he said.

Kruger said he can't provide details because the system hasn't been finished, but he noted that some technology will be third-party-based and integrated by Citrix.

In tbe meantime, Citrix is adding license-activation improvements to a new MetaFrame update, due next year

Alvin Park, an analyst at Gartner Inc., said many vendors are considering new tools to not only help customers track their licenses but also to keep them io compliance.

Citrix's Licensing Changes

MAY 1998 Subscription Advantage option is launched.

MARCH 1999 Electronic licensing option is added.

FEBRUARY 2001 Licensing model based on servers and concurrent users is aggregated. Licensing is now based only on concurrent user connections.

MAY 2002 One-year Subscription Advantage plan is made mandatory.

Continued from page 1

Web Services

formation from disparate applications to a portal. Although the portal would be used for a wide range of business functions, it would also help with integration, he said.

Hugh Jurkiewicz, a corporate architect technologist in the Wellesley Hills, Mass., office of Sun Life Financial Services of Canada Inc., said he can foresee Web services technology complementing bis firm's integration work in situations where security and transaction needs aren't high.

Jurkiewicz said he also bopes that Web services will drive integration broker vendors to lower the high price of their software.

"For more mission-critical application integration needs, we may not wish to experiment with Web services," he said.

As has been the case for some time, IT managers continued to express concerns about the immaturity of Web services standards, particularly in the area of security.

"The security issues, I think, are going to be a big issue with our company. The standards aren't all there yet," said Tim Lienemann, a senior technical designer at Pittsburgh-based U.S. Steel Corp., whose internal development staff does much of its integration work.

Janelle Hill, an analyst at Meta Group Inc. in Stamford, Conn., said only a small percentage of IT shops are currently incorporating Web services into their integration strategies or requirements because of confusion over what Web services are and where they might be used in their applicatioo portfolios.

A 'Thin Veneer'

Hill said that during the next five years, integration vendors and IT shops will experiment by wrapping a "thin veneer" around their applications, in the form of Web Services Definition Language (WSDL) interfaces.

However, Hill predicted that it will take at least five years for companies to re-engineer their core applications to be service-oriented and gain interoperability "without a whole lot of transformation being required in the middle."

Roy Schulte, an analyst at Gartner, said very few applications will run entirely free of Web services, if for no other reason than "because every vendor in the world has built it into their products."

Schulte recommended that companies building new applications from scratch employ a service-oriented architecture and use WSDL to document the interfaces. That will make it easier to integrate those applications with existing legacy and purchased applications, because it will have "nice, defined calls," he said.



Companies can then wrap their older applications with WSDL interfaces and write the code needed to transform the data. Or they can purchase an integratioo broker from specialized vendors such as Tibco Software Inc., webMethods Inc., SeeBeyond Technology Corp., Mercator Software Inc. and Vitria Technology Inc., or from large vendors such as IBM and Microsoft Corp.

Schulte said that only a small percentage of IT shops now use integration brokers, but he predicted that more will use them as Web services help drive down the high cost of the adapters that are needed to make connections between different applications.

"If you put in Web services and you cut the cost of tbe adapters in half, then you've cut the entire project cost by a quarter, and suddeoly projects that you couldn't cost-justify before, you can now cost-justify," he said.

But it may take some time for the impact to trickle down to IT shops. One IT manager at a large retail chain, who requested anonymity, said he isn't interested in the Web services strategies of integration brokers "because it's still in the big-hype cycle."

"With Web services, it's going to be a long buy-in phase," he said.

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FRANK HAYES ■ FRANKLY SPEAKING

The New IBM

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You say that doesn't help the companies that get crushed by the monopolist? No, it doesn't. But that's nothing new. Remember, monopolist IBM rolled over General Electric, RCA, Honeywell, Control Data, Burroughs, Sperry, NCR, Amdahl and many smaller mainframe vendors on the way to becoming the original 800-pound gorilla in IT.

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If you're an IT shop, it probably means looking hard at alternatives you've never considered before — thinking outside the conventional IT box, maybe way outside it, to find new ways of making users more productive and effective.

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Because the antitrust noose around its neck may slow it down a little. But if you want to draw and quarter Microsoft, you'll have to do it yourself. ◗



Frank Hayes, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Do You Really Want an Answer?

This e-business project connects customers and suppliers to a utility company's mainframes, and the managing pilot fish takes no chances – there are weeks of user training and nine months of testing before it goes live. Result: On Day 1, there's exactly one user who reports a showstopping problem. "I've logged into the system," user says. "Now what do I do?"

SHARK TANK

Count On It

Company wants to give discount cards to its customers. And executives want to be able to support 100 million customers – but with just a six-digit ID number for each customer. That's mathematically impossible, IT consultant pilot fish points out, even if you used every number from 000000 up to 999999. Next question: "What if we don't assign them sequentially?"

That Often?

IT pilot fish sets up e-mail for each salesperson at this auto dealership. "The idea was that prospective car buyers could e-mail them via a form on the dealership Web site and, hopefully, end up buying a car," says fish. "A week later, one salesman stopped me in the showroom to say how wonderful his e-mail was and to tell me he intended to check it every week."

Yeah, Really

Upset engineer needs some files restored that he accidentally dragged to the Windows recycle bin, he tells help desk pilot fish. Didn't you see the "Confirm File Delete" message? fish asks. Nope, says engineer – he turned that off. "It's poor engineering," he says, "when it should be perfectly clear that once I've dragged them to the recycle bin, I do want to delete them."

Heck, Why Not?

What this company needs is a network management system, bosses decide. Some $50,000 and months of late nights and weekends later, it's finally in place. "Only missed the production target date by six days," says a pilot fish on the project. That very week, operations manager who approved the new system sticks his head into fish's office with a question: "This network management system – is this something we could target for outsourcing?"

Much Better

User hates her keyboard: "The keys stick, the response isn't good," she tells IT pilot fish. So fish replaces it. Now the keys are too high and it doesn't feel right, she says. "In the end, I cleaned up her old keyboard and gave it back to her," says fish. "She came back and said this keyboard was wonderful – much better than either of the keyboards she had previously."

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